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## ORIGINAL ARTICLES.

### PRIMARY RETROPERITONEAL SARCOMA WITH REPORT OF CASES.*

BY JOHN C. MUNRO, M. D., Boston, Mass.
Surgeon-in-Chief Carney Hospital.

The history of progress in the surgical treatment of the more common or, perhaps, I should say the more accurately recognized diseases, has been the working backward through hopeless and severe types, to the less severe, and finally to the forms which are so mild and innocent in their manifestations that until their true significance has been accurately demonstrated by surgeons, they are regarded as unimportant or without bearing on the late, death-dealing lesions. Thus the history of appendiceal surgery began with the treatment of the abscess in the diffuse-infection type. Advance was then made by attacking the acute infection before it had jumped the bounds of the appendix, until now thousands of lives and infinite suffering are saved by removal of the organ where the lesion is so insignificant that it would be overlooked, had we not learned by bitter experience that these very insignificant lesions are but the precursors of the grave and fatal lesions for which alone surgery was sought a few years ago. So it is with diseases of the biliary passages, of the stomach, prostate, etc.

May not the same criticism, though to a less extent, apply to retroperitoneal lesions? To a less extent, a priori, in dealing with retroperitoneal sarcoma because it is a malignant disease of the worst type. But these tumors are localized early in their course; some of them can be extirpated radically and though permanent cure may be doubtful, there is no question as to the prolongation of life and the alleviation of suffering. Rarely do these cases come early to the surgeon. He sees them when they are well advanced, after the patient himself has observed his own tumor and hence months after it should have been detected by the watchful practitioner. His digestion or other abdominal symptoms have been allowed to persist for months and have been treated in a haphazard way by the internist long after the time when an exploration would have cleared up

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an obscure diagnosis and given the patient his only chance for permanent or temporary relief.

As we have worked backward, so to speak, in the battle with the curable abdominal diseases, so must we work backward in the course of time with this less hopeful disease which is still obscure in its early, and on that account, its most important symptoms. No one surgeon has had enough experience with retroperitoneal sarcoma to obtain the broad perspective that he holds in such diseases as those mentioned above, but by the slow accumulation of data from many men we may sooner or later discover the combination that will help to solve the early diagnosis of this obscure disease.

Retroperitoneal sarcoma, when secondary to a focus in one of the external organs is, as a rule, diagnosticated without difficulty. But when it comes primarily from the retroperitoneal tissues it is so apt to simulate other and more common diseases that it is overlooked until beyond surgical relief. By careful study of the symptoms in secondary sarcoma we may be able to obtain light that will aid us in detecting primary growths early in their appearance. Recent articles on this subject, like those of Steele and others, collect a comparatively small number of cases from which to draw conclusions. The writer would add a few cases in the hope that a brief study of them and of those reported within the last decade may make it possible to draw some conclusion that will aid us in our diagnosis and treatment.

Retroperitoneal sarcoma may come at any period of life from infancy to old age; all types are represented and, as in a case reported by Gobell, there may be a combination of sarcoma and carcinoma. According to Steele the growths tend to soften through hemorrhagic degeneration. Metastases may be found, usually in the neighboring organs (liver, spleen, etc.). The adjoining viscera may become involved by direct invasion as is evident in some of our cases. As in sarcoma elsewhere the prognosis is bad. Cases that are suspected or recognized early may allow of complete extirpation with freedom from recurrence for a longer or shorter time, as in Mairinger's patient, where a fibro sarcoma was easily removed because of its narrow base.

As a rule, however, the growths are so extensive or are seen so late in their history, that operation is of no avail. Coley has reported some success with the prodigiosus toxin and probably the X-ray may be of occasional benefit, but as a rule the outcome is fatal. Death comes from interference, through pressure, with the function of the abdominal organs; from rupture into the abdominal cavity of a degenerated growth as reported by Steele in 3 cases; following hemorrhage from a ruptured vessel in the capsule as reported by Williams; or from general cachexia.

According to Steele the tumors are more liable to be found in the lumbar region and on the right side, but the aggregate numbers are too small

yet to definitely settle the latter point. Tumor growths are more rarely seen high up and low down in the prevertebral cellular space. The tumor is usually localized, especially in the early stages, though not necessarily so, as we occasionally find the same infection diffusely incorporated in the retroperitoneal nodes at a comparatively early period. Steele finds that these tumors degenerate early and he advances their change in consistency from a hard to a fluctuating tumor as an important diagnostic sign.

Occasionally there is found more or less evening rise of temperature and it is doubtful if this is always due to septic degeneration of the growth. The presence of moderate fever should not rule out the possibility of a malignant retroperitoneal tumor. The symptoms so far as one can judge by analyzing the published cases are not always characteristic nor even consistent. Lockwood found in two patients with enormous growths only dyspnea and a feeling of weight in the hypogastrium to guide him. Rogowski and others have found œdema of the lower extremity as the dominating symptom, but as a rule in the lumbar types, one may look for disturbance in the function of the gastro-intestinal tract, such as distress after eating, possibly with occasional vomiting, gastric pain, constipation, persistent distress from gas, etc. Steele includes diarrhea among the likely symptoms.

Steady loss of weight and strength, out of proportion to the digestive disturbance, anorexia followed by neuralgic pains and œdema of the lower extremities are symptoms that should awaken suspicions of some intra-abdominal lesion, more serious than the so-called medical types of dyspepsia.

In most patients the tumors can be felt more or less distinctly at a fairly early stage if sufficient care is taken in examination. When felt or suspected, the earlier an exploration is made the better. After the tumor is visible or easily palpable the time for radical interference is past.

The relation of colonic tympany to local dullness, etc., holds good just as it does in any retroperitoneal tumor, but by the time this sign can be demonstrated as characteristic, the growth has passed far beyond surgical relief. In the early stages, an obscure deep fullness, especially in the lumbar region, whether on the side or over the spine, a slight tenderness of this fullness associated with emaciation, digestive disturbance not consequent upon discoverable lesion of the stomach, together with abdominal pain not dispersed by the ordinary treatment for functional indigestion should arouse sufficient suspicion of the presence of retroperitoneal growth—whether sarcoma or not is immaterial—to warrant exploration.

To illustrate some of the points that I would emphasize I will briefly report the histories of my cases with reference to the clinical picture and the conditions found at operation. My earliest case was a man of 50 who was sent to the Boston City Hospital with a diagnosis of stricture of the rectum. He had had symptoms of intestinal obstruction with

severe pain in the back for 8 months. That there was some deep obstruction to the circulation was shown by the dilatation of the epigastric veins. Exploration revealed an inoperable retro-peritoneal tumor pushing the pancreas, vena cava and portal vessels forward. At autopsy a large sarcoma was found surrounding the aorta and extending from the arch to the bifurcation, and spreading laterally to both kidneys, burying but not involving them.

Not long after this a man 27 years old was sent to me at the Boston City Hospital and though I have previously believed and reported this case as one of sarcoma of the stomach I think now that it was primarily a retroperitoneal sarcoma. About six months before I saw him he began to have diffuse epigastric pain most marked after meals. For awhile there was marked flatulence also. He had vomited a little blood once, but otherwise he had rarely vomited at all. He had become markedly constipated and had lost weight and strength. He himself had observed a tumor in the epigastrium for several weeks. A month before entrance he had had an attack of very severe abdominal pain, but without any concomitant signs or symptoms. Examination of his blood showed 30 per cent hemaglobin and 1½ millions red globules. He exhibited an epigastric tumor, slightly movable from side to side, but not descending with respiration. He was too ill for operation and was put upon forced feeding by mouth and rectum. In a month he had improved enough to warrant exploration. Most of the time there had been more or less irregular temperature, although there was no leucocytosis. Exploration showed a large nodular tumor extending from the spine to the anterior wall, to which it was adherent. In the left flank, near the kidney, was a second smaller retroperitoneal nodule. A fragment was removed for diagnosis and the abdomen closed. The patient was able to return to Philadelphia shortly afterwards, where he died in the course of some weeks.

My third case may be included here, though it originated in the perirectal connective tissue, involving the abdominal lymphatics later. The patient, a Jew, 57 years old, was first seen by me at the Boston City Hospital, in 1902, when I removed by combined abdominal and perineal route the lower portion of the rectum, together with the sarcomatous growth that had invaded it from the perirectal space. Following this for 2½ years the patient returned every few months with recurrence, finally requiring a colostomy, the invasion having progressed upwards into the abdomen.

The fourth case is that of a young man who 3½ weeks before his entrance to the Carney Hospital had complained of pain in the lumbar region, especially when lying down. For two months he had noticed an abdominal tumor. He had lost weight, strength and appetite. Exploration revealed a solid retroperineal tumor extending from the left nearly to the right kidney. It was movable vertically and apparently

started from a pedicle at the lower edge of the pancreas. The abdomen was closed as consent had not been obtained for radical operation. He returned to the hospital, however, begging for relief from the intolerable pain in his back and one month after the first operation the abdomen was reopened and the growth was found considerably increased in size and adherent to the anterior wall and to the transverse colon. The growth was then freed from the pancreas, of which it was independent pathologically, and resected together with all the small intestine except 4 inches of the jejunum and the lower 12 inches of the ileum. Anastomosis was made with a Murphy button and the wound closed with drainage. Five days later the patient died and partial autopsy showed that the gut had sloughed at the joint from interference with the blood supply.

The fifth case is that of a woman of 54, who, six months before entrance to the Carney Hospital, was taken suddenly ill with sharp epigastric pain, extending into the left side, followed in a few weeks by so-called rheumatism of the lower extremities. Two months before entrance she had indigestion with considerable vomiting coming on after meals. She complained mostly of distress from solid food. There had been no hematemesis nor jaundice. She had lost much weight and strength. Deep in the epigastrium a small movable tumor could be felt. At operation the pancreas felt hard, spread out, bulging forward and pushing upwards towards the diaphragm. As there were stones in the gall-bladder we made the diagnosis of chronic pancreatitis, and drained the gall-bladder. After the drain came out and the gall-bladder closed there was return of severe colic and slowly rising temperature and pulse, with marked tenderness in the tumor. Therefore the gall bladder was reopened for permanent drainage. In spite of the continuous flow of bile, however, the patient was not comfortable. She could not retain her food, she had distress whenever she attempted to eat and was slowly starving.

A third operation, six weeks after the first one, was done and the growth, plainly a retroperitoneal sarcoma, had increased very rapidly, extending to the diaphragm, into the left renal region and pushing forwards to become adherent to the lesser omentum. A gastroenterostomy was done for palliation and a fragment removed for examination. The vomiting ceased and the patient was able to take food, but she steadily failed and died two weeks later.

The sixth case is that of a man 26 years old, who, about six weeks before entrance to the Carney Hospital, began to have intestinal indigestion and constipation. Six months before entrance he himself had observed a tumor below the umbilicus. There had been no vomiting, but he had steadily lost flesh and strength. He also complained of pain in the penis at micturition. An irregular solid tumor was easily felt in the hypogastrium. Under ether a solid, pear-shaped tumor was found

firmly wedged in the pelvis. On being delivered from its lodgment it was found to take origin in the intramesenteric layers of the small intestine occupying probably the middle half of the gut length, the gut itself apparently being involved secondarily. The patient was too ill to warrant radical operation and died a few weeks later at his home.

The seventh case, a man about 40 years old, was sent to us at the Carney Hospital as a case of ulcer of the stomach. He had had dyspepsia for twelve years, but nine months before entrance he began to belch gas which was very marked and annoying for two months and then ceased. He had had distress in the left epigastric region, but at no time had there been vomiting. He had lost 45 pounds and was told by a stomach specialist that he had indigestion possibly from cancer of the stomach. At entrance he was very constipated and complained mainly of distress coming with the ingestion of food. Operation by Dr. Bottomley showed a localized retroperitoneal sarcomatous gland adherent to the spleen, which was infected secondarily. Both were removed and the patient was discharged in good condition. At present, six months later, there is no sign of recurrence.

The eighth case is that of a man of 65 who was referred to us as a case of hypertrophy of the prostate. For six years he had had frequent micturition by day and at least twice at night. A week before I saw him there had developed œdema of the scrotum and right lower extremity. Examination showed a hard mass in the right pelvis. Exploration showed a hard, nodular, immovable tumor behind the peritoneum in the iliac fossa, filling a third of the right half of the pelvis, extending posteriorly to the median line and forcing the rectum forward, while anteriorly it had infiltrated in front of the bladder, pushing the latter upwards and to the left. At the end of two weeks the left thigh became odematous and the patient was sent home to die.

The ninth and last case is that of a man 38 years old who, one year before entrance to the Carney Hospital, began to have aching epigastric pain of short duration after supper. Later the pain became more constant, extending into the lower abdomen and back. Rarely was there vomiting. He had had no hematemesis nor jaundice, but he had lost much weight and strength and had not worked for six months. Solid food caused pain, but he could take liquids. Examination of the stomach contents was negative. A hard nodular mass could be felt in the epigastrium, moving with respiration. A diagnosis of cancer of the stomach was made.

At operation a large irregular retroperitoneal sarcoma more to the left than to the right of the median line was found pushing below to the pelvis, though its pedicle or base did not extend to the level of the umbilicus. Above, it pushed upwards nearly to the diaphragm and bulged forward to meet the abdominal wall. The upper portion was fixed, the

lower was movable. A fragment was removed for examination. The wound was closed and the patient sent home to die.

In conclusion, a consideration of all the published cases, together with our own, would suggest that the association of rapid loss of strength and weight, dyspeptic symptoms without the accompanying characteristic signs of definite stomach lesions, sudden constipation or, according to Steele, diarrhea, irregular temperature, abdominal pain with indefinite fullness and slight tenderness in these deep abdominal regions, should cause us to suspect beginning malignant retroperitoneal growth in the lumbar region. Where the growth is pelvic or iliac in origin we should expect to find early œdema and neuralgia of a lower extremity, rectal or bladder symptoms, and a mass easily discerned on pelvic examination. In the growths originating high up there is little that is characteristic beyond persistent pain or backache, anomalous dyspepsia and the accompanying asthenia.

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## INJURIES TO THE DIAPHRAGM.*

By Walter C. G. Kirchner, A. B., M. D., of St. Louis, Mo.

Injuries to the diaphragm, when considered in connection with injuries to other parts of the body, are comparatively rare. This may not seem strange, when we remember how well the diaphragm is protected by the adjacent organs, the liver, the lungs, the spleen, and by the chest wall. Owing perhaps to the rarity of such injuries, the subject has not generally received the proper attention, and often injuries to the diaphragm are overlooked because certain wounds in the chest or abdomen are considered trivial in character.

Injuries to the diaphragm would be more readily recognized if there were a better practical knowledge of the anatomy of the diaphragm, if the seriousness of such injuries, which may lead to immediate or remote dangers, were better appreciated, and if the diagnosis were not often so difficult. I have seen cases in which there was perforation of the diaphragm due to extension of appendicular abscesses, to liver abscesses, to aneurism, and to other causes, but I wish to confine this paper to diaphragmatic injuries primarily or secondarily the result of trauma. In order to bring out certain points in diagnosis and treatment, I shall give brief reports of four cases on which I had occasion to operate, and in which there was injury to the diaphragm.

Case 1. Stab wound of the chest, penetration of the diaphragm and injury to left kidney; thoractomy, suture of kidney and diaphragm; recovery.

*History*—The patient, a colored female, 25 years of age, entered the hospital with a diagnosis of stab wound of the chest. She was of a de-

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generate type and was irregular in her habits of life. There was nothing of special interest in her family or personal history, except that she had suffered with an attack of typhoid fever.

When she was placed on the examining table, a hurried examination was made. She was well nourished and the muscles were well developed. The heart and lungs seemed normal. At the lower and posterior portion of the left side of the chest there was pain and dullness on percussion. Upon catheterization almost pure blood was obtained. Just external to the anterior axillary line, between the eighth and ninth ribs there was a stab wound about an inch in length. The patient was quickly prepared for thoracotomy and for laparotomy, and with the sterilized finger the wound was explored. The pleural cavity had been entered and a wound in the diaphragm and kidney was easily felt. Fearing a fatal hæmorrhage an operation was advised.

*Operation*—Under general chloroform anæsthesia, the patient lying on her right side, over a pad, so that the left kidney was well elevated, the stab wound was enlarged and portions of the eighth and ninth ribs resected, as is usually done in thoracotomy. A good view of the upper surface of the diaphragm and of the wound in this muscle was thus obtained. Through the wound in the diaphragm the kidney could be felt. This wound was enlarged, the peri-renal fat was loosened, and by pressure from below, and with the use of deep retractors, the kidney was pushed into the field of operation, and the wound in the kidney exposed. The wound was large enough to admit the end of the little finger and extended well into the kidney substance.

The wound in the kidney was closed with two silk sutures, the stitches being rather deep and far enough from the margin to prevent tearing of kidney substance. The margins were well apposed and the bleeding had stopped.

The wound in the diaphragm was closed with catgut without drainage of the kidney area. The pleural cavity contained a considerable quantity of clotted blood which was removed by sponging. The lung had retracted and injury to this organ could not well be made out. As well as was possible the wound of the pleural surface was closed with catgut suture. For the muscles and skin silkworm-gut sutures were used, and the wound was closed without drainage.

*Subsequent History*—The patient recovered well from the shock of the operation. She later coughed up bloody mucus, and on the fourth day there was some elevation of temperature. There was pain in the left side, and emphysema in the tissues about the wound. It was necessary to open the wound, and the discharge which at first was serous, became purulent in character, and the patient was then treated as for empyema. In due time the wound healed, and she was feeling well when

she left the hospital. I heard from the case a year later, and she was in good health.

For the hæmorrhage and shock, she was given hypodermoclysis of saline solution. She also received urinary antiseptic medication and bladder irrigations. A solution of potassium permanganate was used in irrigating the pleural cavity.

Case 2. Gunshot wound of chest; perforation of diaphragm; and prolapse of omentum into pleural cavity; thoracotomy; laparotomy; suture of diaphragm; recovery.

The patient, a colored youth of medium stature and moderately well developed, entered the City Hospital with a history of gunshot wounds of the left side of the chest. His pulse was weak and he was somewhat in shock. He had not vomited, his expectoration was not bloody, and he did not complain much of pain. He gave a history of chronic constipation, and his bowels had not moved for five days. He was very weak, having recovered but a short time ago from typhoid fever.

Upon examination two bullet wounds were found, both over the ninth rib. Not far removed from one of the wounds a bullet, which was felt subcutaneously, was easily and promptly removed. The second wound, which was in the mid-axillary line, was enlarged, and on exploring with the sterilized finger, it was found that the bullet having penetrated the upper portion of the rib, had entered the chest cavity. Percussion of the chest did not give dullness and there was no evidence of active hæmorrhage in the pleural cavity. The heart sounds were weak and a well marked mitral murmur was present. Examination of the abdomen did not reveal anything abnormal.

While it was evident that the pleural cavity had been entered, a definite diagnosis of penetration of the abdomen and injury to viscera could not be made. From the location of the wound and from the apparent direction of the bullet, it seemed probable, however, that the abdominal cavity had been entered, and it was evident that a definite diagnosis could only be made by exploratory operation. Preparations were accordingly made for thoracotomy and for laparotomy.

Owing to the patient's weakened condition and to the existence of the heart lesion, thoracotomy was performed under local anæsthesia, 0.1 per cent. cocaine solution being used for the purpose. At the site of the injury the muscles overlapped and crossed, but by muscle-splitting incisions, the injury to the bone was exposed with but little damage to the structures, and, in the usual manner, about an inch of the ninth rib was resected. The external surface of the resected portion presented a circular opening made by the bullet, while the internal surface of the bone was badly shattered and splintered. The opening in the pleural cavity was enlarged to admit the finger, and, on exploration, a portion of the omentum which had ascended through an opening in the diaphragm

was encountered in the pleural cavity. The patient was apprised of his condition and laparotomy was performed under general anæsthesia, the incision being made through the left rectus muscle and extending downward from the margin of the ribs. There was no intra-abdominal hæmorrhage and the stomach and intestines were found intact. The omentum was withdrawn from the pleural cavity and the injury in the diaphragm located. By means of volcella and forcible traction the wound in the diaphragm was brought into view. The cut surfaces of the wound were approximated with interrupted through-and-through silk sutures, and these were covered over with peritoneum by means of Lembert stitches. The high position of the injury and the movements of respiration render the operation somewhat difficult, but with sufficient traction the wound can be brought into view and the diaphragm steadied. When the diaphragm was permitted to retract to its normal position it was found that the opening had been perfectly closed. No other injury having been found, the abdominal cavity was copiously flushed with physiological saline solution and the wound completely closed with through-and-through silkworm-gut sutures. A gauze drain was placed into the pleural cavity through the wound in the chest.

The patient soon recovered from the effects of the operation. His convalescence was uneventful except that in the beginning, owing to the condition of obstinate constipation, the abdomen became considerably distended and great tension was thereby produced on the sutures. The wounds in the chest and in the abdomen healed promptly and without complication.

I saw the patient about eight months after he left the hospital. He was working at his usual occupation, and he stated that he had experienced no inconvenience as a result of the operation. He had, however, evidence of incipient phthisis and this condition prevented the immediate repair of a small post-operative hernia.

Case 3. Stab wound of the chest, perforation of the diaphragm, and penetration of stomach; laparotomy; death from shock.

The patient, a shoemaker by occupation, was a strong and well developed white male, 22 years of age. While in a quarrel, he received a stab wound in the left side of the chest.

When he was received at the hospital he was at once prepared for operation. The knife had entered the chest just below the fifth rib on the left side in the anterior axillary line. The wound was probed with the sterile finger, and it was found to take a direction inward and downward between the ribs, and to penetrate the diaphragm. With the finger in the opening in the chest, the wall of the stomach and the free margin of the liver could be felt.

*Operation*—Under chloroform anæsthesia, median section was made below the ensiform, and the stomach was found to be greatly dilated, and

contained a considerable quantity of fluid and undigested food, which exuded from a wound on the greater curvature near the cardiac end. A considerable quantity of stomach contents had entered the free peritoneal cavity. The intestines were walled off, the stomach delivered through the abdominal wound and pulled so as to expose the wound, which was closed with the Czerny-Lembert suture, reinforced by a second row of Lembert sutures. There was considerable straining during this procedure, but the opening was effectually closed. The neighboring organs, liver, transverse colon, and intestines were examined and no further visceral injury was found.

The wound in the diaphragm was one and one-half inches in length. With the finger in the opening, the diaphragm was pulled forward into view and was then grasped with forceps, so that the wound could be sutured. Six sutures were required to close the opening. The abdominal cavity was then copiously flushed with saline solution and two gauze drains inserted, one leading to the wound in the stomach, the other was placed under the liver. The abdominal wound was closed with through-and-through silkworm-gut sutures. The pleural cavity contained clots of blood, and when these were removed, a gauze drain was placed through the wound in the chest. At the close of the operation the stomach tube was used and a considerable quantity of stale beer and undigested food removed.

The patient was very restless after the operation, and he soon became delirious. His respirations became very rapid and his temperature and pulse rate also steadily increased. Shortly before death, which occurred on the second day, his temperature rose to 107.4 degrees.

*Autopsy*—The wound in the stomach was completely sealed over with exudate and the sutures were found intact. The wound in the diaphragm was also completely closed. The peritoneal cavity and its contents were free from inflammation, but there were considerable inflammatory changes in the pleural cavity. The spleen was enlarged and soft in consistency. The heart, lungs and kidneys were practically normal. The chief cause of death was attributed to shock.

Case 4. Penetrating stab wound of the thorax and abdomen; laparotomy, in which a true diaphragmatic hernia was encountered; death from hæmorrhage and shock.

The patient, a white male, 35 years of age, of medium stature, had received a stab wound at the lower border of the chest in the mammary line. When he was received at the hospital there was no radial pulse, both pupils were dilated, the breathing was sterterous, and he was anæmic, cold and in shock. Pressure over the abodmen was painful, and there was evidence of severe intra-abdominal hæmorrhage.

After the usual preparation, under a general anæsthetic, the incision was enlarged downward and it was found that the penetrating instrument

had severed three ribs in the mammary line, cutting through the costal margin. The abdominal cavity was filled with blood. The spleen was slightly injured but did not bleed much. The gastro-colic ligament was severed and there was active hæmorrhage from two vessels. These vessels were ligated. The omentum was not in its normal position, but instead was adherent to the diaphragm. On further examination, an opening through which the finger could be inserted, was found in the diaphragm. An incision was made in the mid-axillary line, through the chest wall, and by exploring by the pleural and abdominal routes, a mass about the size of a pear could be felt in the pleural cavity. The omentum

FIG. 1.—Specimen of Diaphragmatic Hernia.—View from peritoneal surface showing omentum, O, passing through hernial opening in diaphragm into sac. (Case IV.)

had ascended through an opening in the diaphragm into the pleural cavity, where it was confined in a sac. A rubber drain was placed into the pleural cavity and a glass tube was placed into the pelvis through a suprapubic incision. A small drain was placed at the upper angle of the laparotomy wound which was closed with silkworm gut sutures. The patient rallied somewhat after the operation and regained consciousness sufficiently to state that he had, on a previous occasion, been stabbed in the chest. The patient had received hypodermoclysis of saline solution, morphine, whiskey and aromatic spirits of ammonia, but these gave only temporary relief and he died a few hours later from symptoms of hæmorrhage and shock.

At the autopsy the specimen of diaphragmatic hernia was obtained (Figs. 1, 2). The hernial sac was 8x5 cm. and contained a great portion of the omentum which has become adherent to the neck of the sac. The ring would easily admit the finger. It is probable that the diaphragm was only partly cut through at the time of injury, and that this so weakened the structure that a hernia resulted, in which the sac was formed by the peritoneal layer.

In order that a diagnosis of injury of the diaphragm may be made, it is important to have a knowledge of the relations of the diaphragm, and to bear in mind certain anatomical landmarks. We can consider the

FIG. 2. - Specimen of Diaphragmatic Hernia.—View from pleural surface showing true sac containing omentum. (Case IV.)

extent of the surface exposed to injury as the *diaphragmatic area* and for practical purposes this may be represented as a projection of the limits of the diaphragm on the external surface.

The diaphragm is not a horizontal partition, as is often supposed, but has rather the shape of a child's hood, opening toward the front, where it is limited by the free border of the costal cartilages. The upper or horizontal portion is convex and conforms in the main to the curvature of the liver. The lower portions lie more or less closely to the ribs, and therefore assume a more vertical position.

Observations upon cadavers have demonstrated that the height of the diaphragm and the relations to the adjacent organs vary greatly in differ-

ent subjects, so that in penetrating wounds of the chest or abdomen with injury to diaphragm, it may be difficult to judge of the seriousness of the injury. The liver, stomach, spleen, or kidney may easily be injured by penetration through the chest-wall within the diaphragmatic area.

The symptoms of injury are often obscure and in many cases they are entirely wanting. Since most of the injuries are on the left side, the left side of the chest, the epigastric and left hypochondriac regions should be carefully examined. There is usually but little pain unless there is prolapse of omentum, or of abdominal viscera. There may then be difficulty of respiration, a sense of fullness in the chest, pain in the epigastrium or the various symptoms of strangulation of bowel may supervene. We should consider penetration of the diaphragm just as we consider penetration of the abdominal wall, and the train of symptoms which may occur in the one case, may also be found in the other. When great crushing violence has taken place, injury to the diaphragm will, in most cases, be obscured by severe injury to other organs.

The diagnosis may be difficult or easy, depending upon the manner in which the wound was received. It is always important to get a history of the case as it pertains to the injury. The position of the body at the time of injury, the direction of the bullet, or instrument causing injury, the length of the cutting or stabbing instrument, the nature of the superficial wound (incised or stab), and in gunshot wounds a study of the margins of the wound,—a study of these minor points, which are only too often overlooked, is of great value as an aid in diagnosis. It should be remembered in stab wounds, that the size of the superficial wound is no index to the damage that has been done. In contusion and rupture of the diaphragm great violence is necessary, and there is great shock or injury to internal organs. In penetrating wounds of the diaphragm, the wound is usually compounded, and two large cavities, the abdominal and the pleural cavity are exposed to infection and to injury of their contents. It is therefore of the greatest importance that a positive diagnosis be made, and this is best done by tactile or ocular demonstration. Sometimes there is prolapse of omentum, through the wound in the chest, or the omentum or injury to the diaphragm may be felt through the pleural cavity.

A very frequent mistake, however, is that the examining finger is passed through the chest wall and opening in the diaphragm, and that the abdominal cavity is mistaken for the pleural cavity. When the external wound is on the border line, the entrance of air into the pleural cavity may decide whether or not the diaphragm has been injured. In laparotomies this air test will also be found of value in detecting perforations. When hernias are suspected the X-ray may be of value in addition to the other physical signs.

The chief danger resulting from injuries of the diaphragm are (1),

penetration of the abdominal cavity, in which case there may be injury to viscera, and laparotomy is then indicated, and (2) hernia or prolapse of abdominal viscera into the pleural cavity. Where the diaphragm has been injured, death may be due to shock, to infection of pleural or abdominal cavity, strangulated diaphragmatic hernia, or to hæmorrhage.

In most cases injury to the diaphragm should be repaired, and treatment is indicated here as strongly as when there is injury to other parts of the body. Simple, small and uncomplicated injuries to the diaphragm, if protected by the liver or spleen, will heal of themselves, and if kept clean need little attention. But injuries to the free portion of the diaphragm should not be overlooked, and should be repaired to prevent the danger of hernia.

These injuries may be treated by the abdominal or thoracic route. Where complications are suspected the abdominal route is to be preferred. Simple injuries to the diaphragm can easily be repaired through the thoracic route. I have found that by simply cutting across two ribs, and by extending the incision laterally or anteriorly, so as to form a U-shaped flap, there is ample room for placing the sutures if perforations exist. If the abdominal route is chosen, the finger, or *volsella,* should be hooked through the opening and by forward traction the wound in the diaphragm can usually be brought into the field of operation. The diaphragm can then be grasped with forceps and retained in place while the wound is being repaired. Strong catgut is the best material to use for this purpose, although silk does very well. If either cavity has been infected, drainage should be used.

In concluding, I wish to emphasize the importance of making a careful examination of all penetrating wounds of the chest or abdomen to learn if injury has been done to the diaphragm, and to urge that diaphragmatic injuries be repaired so that hernia and secondary complications may be avoided.

# HISTORICAL.

## A BRIEF SKETCH OF THE LIFE AND WRITINGS OF FABRICIUS OF AQUAPENDENTE.

By Joseph Grindon, Ph.B., M. D., St. Louis.

Nestling among the Appenines, within the territory formerly ruled by the Venetian Republic, lies the little town of Aquapendente. There, in the year 1537, was born the great anatomist and surgeon, Hieronymus Fabricius. His parents, though poor, must have possessed unusual character and intelligence, for they determined to make the sacrifices necessary to provide their son with an education. He was accordingly sent to the University of Padua, where after studying Latin and Greek, and having completed the course in philosophy, he took up the study of medicine, in which art he was to rise to pre-eminent rank.

Without wishing to lessen in any degree the glory attaching to the excellent capacities and virtues which were the inward springs of Fabricius's greatness, we may point out that he lived at a time of great mental activity, when a brilliant mind could not but be about some work, when the very air bore a contagion of investigation, of inquiry into the validity of old accepted doctrines, and of seeking after new truths.

The generation of Fabricius, and that which immediately preceded it, witnessed great movements in religious, political and scientific thought, as well as in the domains of literature and of art, of which our twentieth century civilization still bears the stamp.

Erasmus had died the year preceding Fabricius' birth, Copernicus following Erasmus seven years later. Fabricius was eight when the Council of Trent began its epoch-making labors, which were to continue with interruptions for a period of eighteen years. The same year there appeared two books of interest to physicians. The first was epochal, "The Manner of Treating Wounds Made by Arquebuses and Other Firearms and Those Made by Arrows, Darts and the Like, and Also by Burns Made Especially by Gunpowder; Composed by Ambroise Paré, Master Barber Surgeon in Paris." The other, of historic interest, was a history of the West Indies by Ovieda, in which the statement was made, for the first time, that syphilis originated in America.* The year following was marked by Luther's death. Our hero was sixteen when Calvin burned another great anatomist, Servetus, at the stake. The Society of Jesus, still under the generalship of Ignatius Loyola, was operating within the church a wonderful revival in learning, zeal and virtue. During the latter

*The *Fabrica* of Vesalius had been published at Basel two years before.

HIERONYMUS FABRICIUS AB AQUAPENDENTE, EQUES, MEDICUS, ET ANATOMICUS IN GYMNASIO PATAVINO
ANATOMICUS PATAVINUS SECUNDUS DIVOS
Martia Fabricio jactat se Nomine Roma,
Pendula Fabricium tu quoque gignis Aqua.
Nobile Fabricio genus, inclita Roma, dedisti;
Pendentem hic contrà Nobilitavit Aquam.

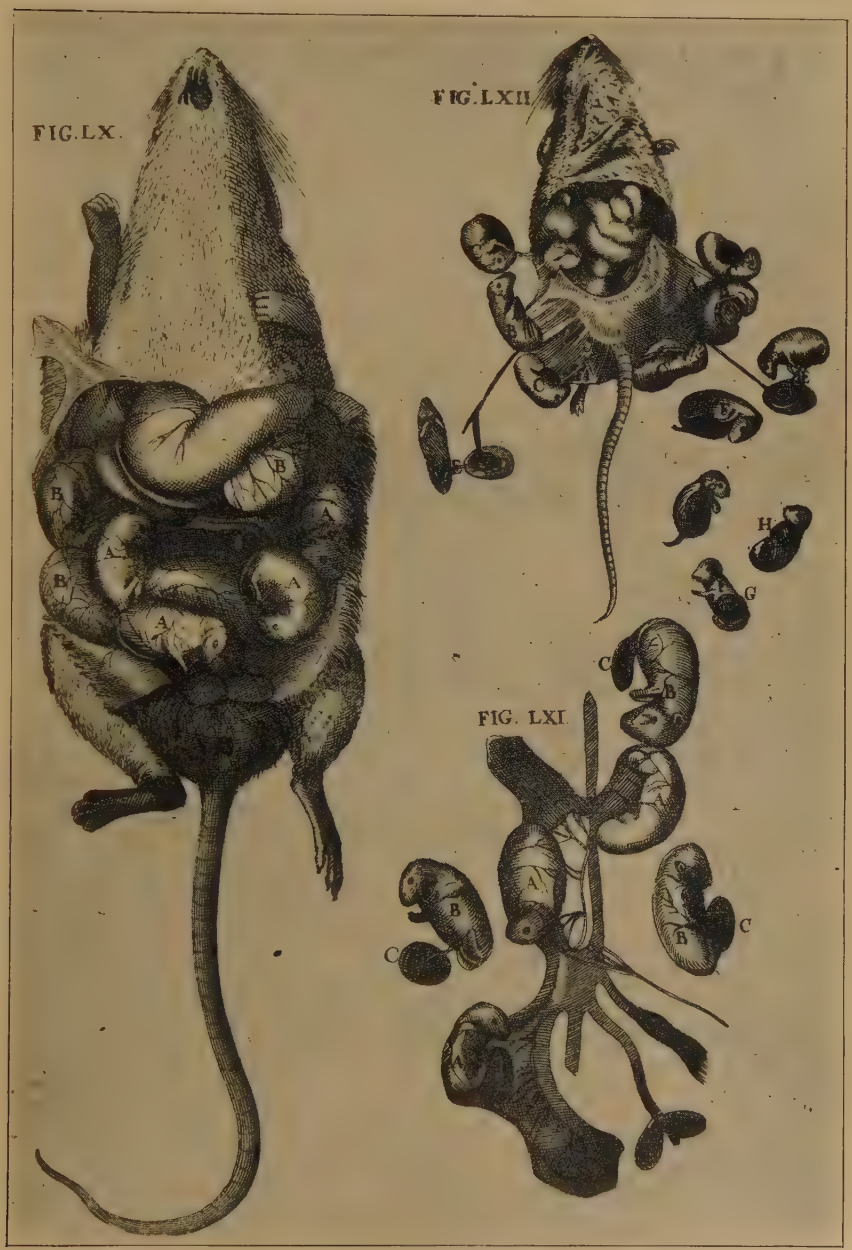
part of his life England enjoyed that wonderful outburst of literary genius which gave us Spencer, Kit Marlowe and Shakespeare. Bacon and Burton were in the midst of their literary labors, although the "Novum Organum" did not appear until the year following Fabricius's death, and the "Anatomy of Melancholy" the year following that. At the same time the literature of Spain and of the world was being enriched by Lope de Vega and Miguel de Cervantes. The deaths of Cervantes and of Shakespeare, occurring on the same day, preceded that of Fabricius by three years.

While Fabricius was studying anatomy at Padua, Tasso was writing the Gerusalemme Liberata at the Court of Ferrara, Michael Angelo was planning the dome of St. Peter's, Benvenuto Cellini was dividing his time between sculpture, metal-work and his masterly if vitriolic autobiography, while as chapel-master at the church of St. John Lateran, Palestrina was laying the foundations of modern music.

Raphael and Leonardo had passed away less than a score of years before his birth, and the powerful influence of their work was yet fresh in men's minds.

And if the time were propitious to mental growth, the place where the young anatomist pursued his studies was no less so. What memories clustered about every stone of the grand old city! Padua, founded soon after the destruction of Troy, the birthplace of Livy, sacked by Alaric, then by Atilla, and restored by Charlemagne. With its lofty walls flanked with bastions and pierced by seven gates, with its wide piazzas planted with trees and surrounded by running streams, with its fine town-house, then nearly four centuries old and still standing to-day, with its magnificent cathedral, then just completed and containing among other treasures a library founded by Petrarch. And the University, where Dante had studied more than 300 years before, with its long list of celebrated professors, among whom we count Vesalius and Realdus Columbus, then and long regarded as the chief seat of law and medicine. We may be sure that the ardent young student was not insensible to these surroundings and memories. Padua, like Bologna, of which it was an offshoot, was a "university of students" in contradistinction to the magistral universities such as Oxford, Cambridge and the university of Paris. The former were governed by the student body itself who even elected the professors, while the latter were controlled by the masters of arts. There were at Padua at that time two separate corporations, the Universitas Juristorum and the Universitas Artistarum. The latter included the faculties of divinity, philosophy and medicine.

"The medical session began on the Feast of St. Luke with an oration in praise of medicine, followed by High Mass and the Litany of the Holy Ghost. The session lasted until the Feast of the Assumption, August 15th, and in this time the whole human body was twice dissected in public by the professors of anatomy. The greater part of the work




Illustrating comparative anatomy of gestation. (From De formato fœtu )

in the University was done between six and eight o'clock in the morning, and some of the lectures were given at daybreak, although Fabricius when he became a professor lectured at the more reasonable hour of nine." (D'Arcy Power.)*

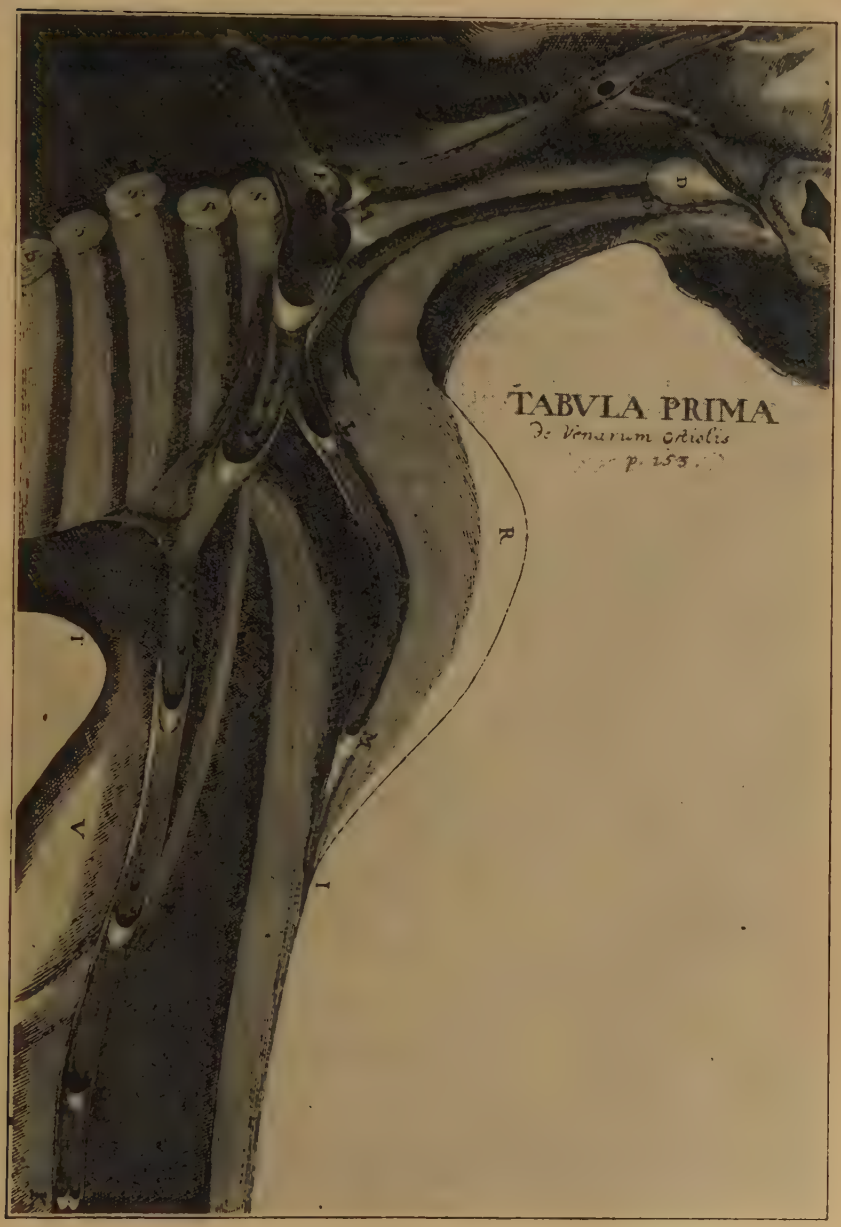
At this University, Fabricius was to come in contact with two of the creative minds of medicine, as the disciple of the one and the teacher of the other, the latter destined to outshine the two former; not only to achieve a fame far greater than that of either Fallopius or Fabricius, but to render a service to science and to humanity which places forever the name of Harvey among those of the few real immortals. The young Englishman matriculated at Padua in 1598, a date conspicuous as that of the publication of the Edict of Nantes.

Fabricius's teacher was the great Fallopius. All historians agree in saying of him that he took the greatest interest in his pupils and spared no pains to advance their progress. He soon formed a high opinion of young Fabricius, and a warm attachment grew up between them. The young man often visited the elder at his home and dissected and performed operations both on the cadaver and upon the living subject under his master's eyes. After passing his final examinations with brilliancy and receiving the doctor's hat, he was often asked by his old professor to take his place before the classes, when the elder man was called away to visit patients at a distance. The same interest, esteem and consideration which Fallopius had shown Fabricius, Fabricius in turn manifested toward Harvey. That the latter was not unappreciative is shown by his description of his teacher as "a most skillful anatomist and venerable old man." The extent to which Harvey drew his inspiration from Fabricius is shown by the parallel between them pointed out by D'Arcy Power in his charming Life of Harvey, (p. 25). "Indeed, when we look at Harvey's work, much of it appears to be a continuation and an amplification of that done by Fabricius. Both were intensely interested in the phenomena of development. Both wrote upon the structure and function of the skin. Both studied the anatomy of the heart, lungs and bloodvessels. Both wrote a treatise 'de Motu Locali.'" There is something prophetic in the circumstance that another young Englishman following the course under Fabricius at the same time, bore the name of Joseph Lister.

Three years after Fallopius's death in 1562, the Republic awarded the chair of anatomy and surgery to Fabricius, he then being twenty-eight years old. For the next ensuing nine years he did not lecture, but limited himself to dissecting and operating before his classes.

He built an amphitheater out of his own means. This later gave place to a finer one erected by the Republic. Power thus describes this building,

*It was at Padua at St. Francis Hospital that Oddi and Botoni made the first attempt in Europe at real clinical teaching. This was in 1558, a year or so after Fabricius' graduation.




Illustrating the valves in the veins. (From De Venarum Ostiolis.)

which still stands: "It is now an ancient building with circular seats arising almost perpendicularly one above the other. The seats are nearly black with age, and they give a most venerable appearance to the small apartment, which is wainscoted with curiously carved oak. The lectures must have been given by candlelight, for the building is so constructed that no daylight can be admitted. The government had placed an inscription over the entrance to commemorate the liberality as well as the generosity of Fabricius, who had built the former structure at his own expense."

His talents and industry brought him great rewards in the way of a large practice, a salary from the Venetian Senate of 1,000 gold scudi a year, with the right of wearing a robe of purple and gold, and the golden collar of the Order of St. Mark. He was granted precedence over all other professors. He finally died in 1619, full of honors, at the age of eighty-two. Portal says of him: "Il était ami tendre généreux & désintéressé." (Hist. de L'Anat. Tome II, p. 197), and that great numbers of people were devotedly attached to him. Among his students, besides the great Harvey, were Casserius, originally a servant in Fabricius's household, and whom he took under his special tutelage, as he himself had been taken by Fallopius, and Gaspard Bauhin, who first gave a correct description of the appendix vermiformis. We learn with interest that at the same time that Harvey, Casserius and Bauhin were following their medical studies under Fabricius, a young Frenchman, later to win laurels in other fields, Francois de Sales, was attending the course in law at the same University, while occupying the chair of mathematics, was Galileo.

Let us now pass on to an examination of this volume "Opera Omnia Anatomica & Physiologica." In folio, Leipsic, 1687. This date is sixty-eight years later than the author's death. This copy will possess an added interest for some of you from the fact that it was presented by the late Dr. William Dickinson of this city to the elder Dr. Boisliniere and by the latter to me. There were numerous earlier editions of Fabricius's separate works, but this, as we are told on the title page, is the first time the treatises on anatomy and physiology were ever issued in one volume. Fabricius's surgical writings are not here included.

The volume commences with "De Formatione Ovi et Pulli," illustrated with seven full-page copper plates. More than ten generations of physiologists have unceasingly labored since this work was written, and yet, all things considered, it is wonderfully full and correct. A quaint passage (p. 31) describes the method by which the chick finally issues from the egg, and may be epitomized as follows:

"The chick needing air, by its chirping notifies its mother that it is time to break the shell, its own beak being too soft and the shell too hard to permit of its liberating itself. There is, however, sufficient space and air in the egg to permit of the chick chirping with sufficient loudness to

make itself heard, as both Pliny and Aristotle bear witness. Perhaps these sounds have somewhat the character of a prayer, (fortéque quidpiam petentis significatrix.) The hen hearing this sound, and understanding how necessary to the chick is a freer supply of air, or if you please, eager to behold her chick and most dear child, (pulli dilectique filii conspiciendi desiderio), pecks open the shell." The error of this description was pointed out some years later by Harvey, who correctly insisted that the chick makes its final escape from the shell without the aid of the hen. Next follows *De Formato Foetu,* in which the author draws largely on the opinions and work of his predecessors, fortified and illustrated by his numerous researches bearing upon the comparative anatomy of gestation. This folio contains thirty-three full-page plates figuring pregnancy in man, the sheep, cow, horse, swine, dog, rat, mouse, guinea-pig (thus early a contributor to science), the shark and the serpent. In fact, it is on this work, together with his observations on the valves of the veins, that Fabricius's chief claim to the admiration of posterity must rest. It is not extraordinary that he should constantly defend certain errors. Thus he maintains (p. 36) that the vessels of the placenta communicate with those of the uterus, although Arantius had proved the contrary some years before. According to him, man has no allantois. It was generally believed at that time that the amnionic fluid was urine, some holding that it escaped by the urethra, although the prevailing opinion was that it passed along the urachus and umbilical cord, spread out between the chorion and amnion, and filtered out through the latter. Fabricius declares that it passes out in this manner to the chorion. However, he holds that the urachus does not consist of a single tube, but of a bundle of minute hollow fibres (p. 44).

Next follows "De Ventriculo, Intestinis et Gula," containing among other things an interesting account of human rumination with the citation of two cases (p. 137). The father of one of these individuals bore on his forehead a horn of the thickness of the little finger, and the length of a Spanish olive, whence, he observes, "we may perhaps infer that his ancestry bore some affinity to that of horned animals, and it was not strange for a begotten son to have inherited from his progenitor something similar."

We now come to "De Venarum Ostiolis." Although Fernel, Sylvius (about 1555), Amatus Luzitanus and Cannanus had written of valves in the veins, their descriptions were vague and left much to be desired. Sylvius indeed does not seem to have considered them as normal and constant structures. Eustachius and Fallopius had denied their existence. Fabricius presents the subject in clear and unmistakable fashion. Seven full-page plates depict these *ostiola* or little doors in various veins. He arrogates to himself the full credit for the discovery, expressing his surprise that no ancient nor modern anatomist should ever have seen the

valves until 1574, when he first beheld them *summa cum laetitia* (p. 150). Yet he could hardly have ignored the work of those who preceded him, since his preceptor, Fallopius, had written on the subject criticizing them. It is a sad commentary on the paralyzing effect of blind reverence for human authority, that Fabricius failed to perceive the full significance of his discovery, although he correctly describes and figures the direction in which the valves open. Although he noticed the effect of ligation about a limb in distending the veins and rendering prominent their valves, he never took the next, and as it seems to us, obvious step, the discovery of the fact that the blood in the veins flows towards the heart. This was left for the more logical mind of his great pupil of undying memory. On the contrary, he explains the use of the valves by saying that they check the excessive torrent of flow toward the extremities and thus prevent their congestion. The latter statement contains a germ of truth, but not as he understood it.

The article on the respiration includes a long commentary on Galen's treatise on the same subject, and contains some errors, as where he enumerates thirty-four intercostal muscles on each side instead of twenty-two (or does he perhaps include the levatores costarum under this term?).

The description of the eye is more full in its physiology than its anatomy, and contains four plates and a dissertation on optics, with many figures in the text.

In the treatise "De Aure" he describes the external ligament of the malleus, considering it, as did all others for a long time, as a muscle. Portal blames him for not giving the credit of the discovery to Eustachius. But the muscle figured in the *tabulae anatomicae*, as you may see in this copy,* is evidently the tensor tympani. He ascribes the discovery of the Eustachian tube to Aristotle and nowhere mentions Eustachius, except to oppose him.

Fallopius had described the cochlea, but Fabricius sees in it only a formless mass of cavities of which no exact description can be given. "Vanus enim, ut puto, omnis erit susceptus labor, quinimo facile (ni fallor) quisque credit eas sine ullo ordine et fortuito potius quam ullius usus gratia conditas esse." (p. 252). (For all such labor will, as it seems to me, be useless. Rather is it easy, if I mistake not, for any one to believe these cavities to be without any order and rather to be constructed by chance than for any use.) This article is illustrated by a plate and is followed by the chapter "De Larynge," with six plates, and another "De Locutione," with one plate.

The treatise "De Loquella Brutorum" contains some curious statements. Our author contends that every animal species has its own language and records instances of persons who could understand them. In support of his belief that men may learn to understand the speech of animals, he adduces the following original argument (p. 327): "Si enim bruta

vix disciplinæ capacia, intelligunt dum homines ad ea loquuntur, profecto longe facillius est ut ab hominibus bruta intelligantur." (For if brutes that are scarcely capable of instruction understand when men speak to them, it should be far easier for man to understand brutes.)

Several long articles are devoted to the physiology of the various forms of locomotion, as walking, swimming, flying and crawling.

After a description of the structure of muscle and of the joints, Fabricius gives an account of the integument with reference to its comparative anatomy, and a description of the scales, hair and feathers of various animals.

I cull from Portal (Histoire de L'Anatomie) what follows in regard to his surgical teachings.

He treats at length of the surgery of the cranium, giving very full directions for trepanning. Incisions into the skin of the face for the relief of occular diseases are discountenanced, but bleeding from the frontal vein may be practiced. A seton at the nucha is preferable. He mentions that the application of the actual cautery at the back of the neck was practiced in Florence upon new-born infants as a prophylactic against epilepsy and apoplexy.

Much attention is given to surgical conditions of the eyelids, but Fabricius believed that topical applications will often be successful and make surgical intervention unnecessary. This leads him to express a thought which some of our modern surgeons might ponder with profit. "Chirurgia omnino dimittenda est, quando medicamentum sanare potest."

An operation for cataract is described, and one for pterygium. In the latter he used a speculum consisting of a leaden ring to be slipped between the lids, and took pains to spare the caruncle. The cautery is advised for the cure of lacrimal fistula.

A new instrument for the removal of nasal polypi is described. Fabricius tells us how to operate for harelip. In cancer of the lip former writers advised the use of a razor heated to redness, but our author prefers a sharp piece of wood or horn dipped in aqua fortis. The part should be dressed with a fresh egg. When inflammatory conditions about the jaws prevent separation of the teeth, patients may be fed by means of a curved canula inserted through one of the nares. Several instruments for the extraction of teeth are mentioned, as well as artificial teeth. Ranula and various affections of the tongue, uvula and tonsils have their appropriate surgical measures. The removal of foreign bodies from the esophagus is considered.

Many surgical conditions of the ear are mentioned, the closure of the auditory canal in children by an adventitious membrane, and foreign bodies in the ear. The removal of the latter is minutely described.

The author has devised an apparatus for torticollis.

Tracheotomy is advised only when the obstruction lies above the trachea

proper. "In summa ubi affectio et materia est tantum a larynge supra, incidendum; ubi vero a larynge infra, abstinendum." Thoracic empyema is to be relieved by an intercostal incision which should be at first very small and enlarged later if needful. One should not seek to evacuate all the pus at first, but on several successive occasions.

An infusion of Periwinkle (Vinca minor) is lauded as an infallible galactagogue. In mammary cancer one should carefully determine whether the gland is free from the thoracic wall. If so, it should be removed at one stroke with a red hot knife, or with a sharp instrument of horn or wood dipped in aqua fortis. If the breast be fixed to the ribs the section should be limited to the skin and the mamma peeled off with the nails. Should there be much hemorrhage, the surface may be dressed with burned silk.

Among other abdominal operations, application of the cautery to the stomach, liver and spleen are mentioned. Fabricius does not endorse these procedures, but quotes from an old master "Satius est sine re patientes mori quam occidere." Puncture is only to be resorted to in ascites when all other means, such as scarification of the scrotum, buttocks and lower extremities have failed. For renal suppression, diuretics having failed, the author recommends friction over the bladder with oil of capers. He was aquainted with the catheter. The parietal fenestrum was introduced at about that time. The surgery of stone in the urinary bladder, and that of the prepuce, glans and meatus are treated of.

The existence of hermaphrodites, denied by certain previous writers, is affirmed. Certain surgical conditions of the vagina and of the anus and rectum are described. For the cure of piles, lukewarm water, leeches and cupping are advised, followed by the actual or the potential cautery. He speaks of affections of the extremities and of the measures indicated for their relief. I think we may recognize Dupuytren's contraction in a description of crooking of the fingers due to a shrinking of the tendons, in which no operation should be attempted, the disease being incurable.

The second part of Fabricius' surgical writings was published in German under the name of the Pentateuch. Its five books in their order treat of tumors, wounds, ulcers, fractures and dislocations.

While Fabricius was a man of vast erudition and drew largely on the writings of his predecessors, he also exhibited much originality. It has been said that he borrowed his best ideas from Paré. This Portal energetically opposes, notwithstanding his natural zeal for the glory of his great compatriot, and supports his thesis on the grounds, first, that the surgical principles of Paré and those of Fabricius are for the most part diametrically opposed, and second, that there is no vestige of proof that these two great men ever met.

We may terminate this sketch, already grown to undue proportions, with Boerhaave's estimate of our author. (Consilia ad Chirurgos) "Superavit enim omnes et nemo illi hanc disputat gloriam."

*Tabulae Anatomicae Clarissimi Viri Bartholomaei Eustachii, with text by Lancisi, Roma, MDCCXXVIII.

# EDITORIAL.

## THE PATIENT AS INTERPRETER.

It may well be worth the trouble to study certain aspects of medicine from the point of view of the patient instead of that of the physician. That the patient may be able to throw light upon the nature and the symptoms of his disease is something easily lost sight of. The mental aloofness which custom has decreed to be the proper attitude between patient and doctor is perhaps a cause of the neglect of the patient as a source of information. Your layman, as a rule, when sickness lays hold of him, is not nearly so ignorant of medicine as the physician thinks he is. The patient knows many things that are in a sense a heritage from the almost forgotten past when medicine was, more commonly than it is today, the business and property of the people. If we examine into the thing that we are fond of calling medical superstition, we shall find that a certain amount of truth is hidden there.

It is always well to remember the dictum of that great philosopher who said that the beliefs of the great mass of humanity extending through generations must of necessity contain some essential element of truth. Nowhere, perhaps, can this tendency be better shown than in some of the lay opinions concerning disease. These have shown a surprising amount of vitality even to this day, and they have not been materially weakened by the attacks directed against them. There is a striking quality of tenaciousness about them which is in strong contrast to the ebb and flow of medical opinion on the same subject. Scientific opinion swings to and fro from the extreme view of one generation of physicians to the narrow view of the next; the people's view on the contrary goes in a straight line through generations, strengthened by the accumulated mass of experience. It becomes firmly entrenched in the common mind through some apt and dramatic descriptive phrase that seemingly touches the soul of the thing.

The layman knows, and his belief is in no way disturbed by the wisdom of the physician, that herpes zoster is always found on one side of the body except in those rare cases when the two sides are attacked at the same time. If this happens the man is sure to die. Such a view as this means the accumulated observation of countless individuals, and on the whole who shall say that it contains no truth and no justification. Many a conclusion cooked out in our own laboratories and served red hot in the special journals contains less.

Beliefs or superstitions of this nature are frequently clothed in terms so nicely descriptive that our own attempts at a proper nomenclature seem

almost futile. One or two examples will show the talent of the people for descriptive phrasing.

The paralysis which follows the apoplectic attack was well known ages ago and the whole phenomenon, dramatic and unusual as it is, came to be known by the name "stroke." It must be admitted that the descriptive quality of this term is striking enough. The paralysis which came on gradually, mysteriously and without any apparent cause was given the name of creeping paralysis. To the lay mind with its power of simple observation and the natural descriptive sense in a mind that sees straight, a term such as this described so well what he saw that there was never a necessity to change it. The whole nomenclature of disease probably contains no more fitting phrase. To have called epilepsy the "falling sickness" illustrates the same sort of grasp on the essential characteristic of this disease. The point which these examples would prove is that an intelligence that can observe so accurately and can name so fittingly is worthy of serious attention.

Many an obscure feature of disease may be illuminated by the power of observation which the sick as well as the healthy share in common, and the wise physician will take advantage of this power and seek to cultivate it. This talent for untrained observation is one of the primitive traits that has made the preservation of the human race possible.

It must be remembered that sickness from the patient's point of view, and all of us are patients at one time or another, is largely a matter of personal experience. Personal experiences the world over are legitimate objects of observations and comment. Their expression in an intelligent way may add just that little mite to the sum of human knowledge which it is the ambition of scientific medicine to increase.

After all the gist of the matter lies in the idea that there should be a readjustment of the relation of physician and patient. The veil of mystery which exists today between the two, largely the result of the physician's endeavor to have it so, should be taken away and give place to a more intimate and a more intelligent relationship. It is well in the first place to make better use of the patient's power of observation of the abnormal happenings in his own person, being sure that such observations are to be accepted with the respect that they deserve.

# COMMENT.

## FRITZ SCHAUDINN.

On June 22nd a septic disease cut off from the pursuance of a course of investigation promising incisive results on wide and important biologic problems, a man, who, in the short 35 years he was allowed to live, had succeeded in ranking with the foremost representatives of modern science. His name was known all over the world as the originator of a new branch of biology, the study of protozoa from a point of view that did not leave them protozoa, but showed them in their intimate relations to the structure and development of metazoic organisms. There is no doubt that Schaudinn's cytologic results on protozoa will in the future have a far-reaching influence in the general teaching on what is called cells. There has been no man before Schaudinn who with similar logic and intent has attacked the problem of pathogenic protozoa. His studies on the tertian and estivo-autumnal parasite have today united the different conceptions of other observers, so that now there is a uniformity of opinion on the character and nature of the cycle of the parasite, on its relation to other organisms and on its relation to the animal and human hosts. His studies on sporozoa, mainly the coccidia, is classic and full of new suggestions for fundamental questions. His admirable work on trypanosoma noctuae and a spirochaete have opened views that will remodel the principal conceptions of propagation and multiplication. They will, besides, transform the classification of protozoa in a way that today can hardly be indicated. Schaudinn has been recognized as the highest authority on protozoa and as a man who at last has opened the way for a deeper insight into the life and development of these organisms.

His discovery of the etiologic factor of syphilis has crowned his life and has made his name immortal. How many other not less enduring crowns would this man have gained had he lived out his life! A genius, whose work promised the elucidation of the deepest and most important, but as yet totally obscure, biologic problems.

The loss by sudden and premature death of a man like Schaudinn is greater than that caused by the death of a Virchow or a Humboldt. Their death was not a loss. They had given us all that they could give. Schaudinn was in the beginning of his career; what he had done aroused the greatest expectations. We cannot be submissive in such a calamity; the loss is one which not alone arouses our sympathy, but is more than all an impediment in the progress of a knowledge of subjects immensely important for the future of our race. The loss is actual, because whoever knew Schaudinn knew that all he had done so far was only an introduction to the solution of problems much wider and more extensive in their scope. We are deprived of that. All we can do is to follow his spirit, to try and walk in his steps, guided by the light that he has thrown out.

We have lost a man who can be replaced only by the devotion of many to the principles established by him.

### MONUMENTA MEDICA.

Poor health forced Dr. Schaefer, the former director of the Insane Asylum Friedrichsberg in Hamburg, to retire from active practice. Looking for something to fill the hours of involuntary leisure he turned to his "oldest friends," the Latin and Greek classics. We may believe his assertion that he now enjoyed them more than he did some thirty years ago when he could translate but not understand and appreciate them. In his readings he came across many paragraphs that should prove of interest to the physician. He has just published a collection of them in a little volume, entitled, "Monumenta Medica" (Verlag von Gebrueder Luedeking in Hamburg). This book offers much entertaining and instructive reading. It contains a great number of quotations which throw an interesting light upon the amount of knowledge possessed by the old classic writers concerning the nature and symptoms of many diseases which cannot fail to attract the attention of the medical historian.

A few of the numerous quotations are offered here in English translation on account of their bearings upon topics which at the present day are widely discussed:

*Licurgus' Views on Criminal Abortion.* (Quoted from Plutarchus' biography of Lycurgus.)

> He also died shortly afterwards and everybody expected Lycurgus to be the next king. He actually took possession of the throne before it became known that his brother's widow was pregnant. When this knowledge came to Lycurgus he announced that the child, if a son, should be the crowned king, and in the meantime he would reign as prodicos (curator). Secretly the queen sent word to him that she was willing to have the child removed from her womb if he would agree to marry her and make her queen.
>
> Although abhorring the woman's suggestion his answer was not in the negative. He pretended to accept her offer and warned her not to jeopardize her life by an operation or by the use of poisonous drugs. He himself he said would see that the child was put out of the way immediately after its birth.
>
> In this manner he deceived the woman until the time when her confinement was near at hand. He then sent trustworthy servants to her house, to watch carefully, and he ordered that if a girl be born she should be placed under the care of the women, but if the newborn be a boy, he should at once be brought to the palace. Lycurgus was dining with some notables when the queen was delivered of a boy who was carried to the king immediately. Taking the boy into his arms, Lycurgus exclaimed: "Spartans, a king has been born to our nation."

The multiplicity of modern specialists undeniably implies a certain disadvantage to the patient in various respects. Probably all patients

and most physicians believe that this tendency of specialization in the practice of medicine is the direct result of the modern trend toward the division of labor. The following quotations clearly prove the incorrectness of such a view:

From Herodotus:

> The practice of medicine is by them (the old Egyptians) divided up as follows: Every physician is only for one disease and not for many, and, therefore, there are physicians in abundance. They have physicians for the eyes, physicians for the head, physicians for the teeth, physicians for the stomach and physicians for other internal diseases.

In "Nigrinus" Lucianus says:

> I had to go to the city (Rome) to see an oculist, because my eye trouble had become worse.

The following noteworthy instance of animal experimentation and vivisection on the human being is described by Plutarchus in "Antonius":

> In the meantime Cleopatra collected a great variety of deadly poisons and with each of them she made experiments on criminals condemned to die, her desire being to ascertain whether its action was painless. She observed that those which caused death quickly also produced great pain, while those which did not cause pain acted slowly; therefore she also made experiments with poisonous animals, which, in her presence, were made to bite other animals. This she did daily and finally observed that only the bite of a poisonous serpent leads to the loss of consciousness not accompanied by any convulsions or moaning.

## CORRESPONDENCE.

San Francisco, July 14, 1906.

Editor Interstate Medical Journal:

In your July issue of the Interstate Medical Journal, page 612, are some notes on ectopic pregnancy; in the first of which arises the question of *ovarian* pregnancy.

About five years ago I operated on a case in which I found a twin pregnancy existing. One in the tube, which had ruptured, and one in the ovary, on same side, unruptured.

I did not find the ovum which had escaped from the tube, but on rupturing the ovarian sac, which was as large as a small walnut, the forming fetus could be plainly seen.

I kept both specimens up to time of our recent great fire, when I lost absolutely everything in my office.

I have operated something more than twenty times for extra-uterine pregnancy and in *every* case the pregnancy was on the right side. I have also seen a few cases in the hands of other surgeons, and they also were on the right side. So I have my first case to see on the left side, though I operated on the wife of a physician of Falls City, Neb., for right tubal pregnancy, who had previously been operated on for like trouble on the left side.

Yours,

140 Sixth Ave. M. E. Van Meter, M. D.

# MEDICAL AND SURGICAL PROGRESS.

## INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

HEMORRHOIDS; THEIR CAUSE, SYMPTOMS AND TREATMENT.—Kuhn (*Der Arzt als Erzicher,* hist 22).—Kuhn writes exhaustively on hemorrhoids in this article. He considers anatomical conditions of importance with regard to the production of hemorrhoids including the complications of hemorrhage, infection, strangulation, fistula and irritation. He gives the etiology as (1) indirect or general: (a) individual disposition, (b) abuse of alcohol, (c) chronic diseases, as diabetes, tuberculosis and blood diseases, (d) variable influences, excessive eating and drinking, misuse of cathartics and constant use of rectal injections, confinement and certain occupations. (2) Direct: (a) Depression in the large intestines, certain occupations, as wind-blower's constipation, passive congestion of the hemorrhoidal veins, chronic colitis, diarrhea, heart and lung diseases. He says the general symptoms are usually due to the underlying cause, liver or gastro-intestinal disturbances, but that also such important symptoms as palpitation, dyspnea, pyrosis, cold feet, anorexia, chilly sensations, are probably due to general circulatory disturbances. Local symptoms are, tickling and pruritus of the rectum, and even painful sensation and feeling of distention and heaviness, sometimes pressure on the abdomen, foreign body sensation in the rectum, localized pain, which may be so great as to make bowel movements apprehensive with tenesmus, prolapse with or without strangulation, infection and secondary colitis. The physical findings of hemorrhoids are made by inspection with or without a proctoscope, by means of a small sponge tied to a string introduced into the rectum to pull the rectum down for inspection. Intussusception in children is differentiated by its ring form, polypi by its pedicle, abnormal mucous covering and the age at which it occurs. Tumors of the rectum are not so rich in blood, and carcinoma of the rectum should early be differentiated.

Treatment. (1) Prophylaxis: (a) The careful selection of soft toilet paper or cotton surrounded by clean toilet paper; (b) careful hygienic bathing with careful attention to the rectum, local or general baths following defecation; (c) local applications of vaseline or lanoline, reduction by massage of protruding mucous membrane. (2) Active: (a) Correction of gross mechanical causes, as tumors, gastro-intestinal disturbances, ascites, etc.; (b) regulation of the bowels; (c) diet; (d) physical exercise; (e) hydrotherapy; (f) pessary. He describes in detail many different forms of rectal pessaries, with one of his own; some he recommended most heartily. Under local applications he classifies the following: (1) Ointments for lubrication; (2) anodynes; (3) healing ointments; (4) cathartic senments. As to operative treatment he says that in many cases operation is not necessary and should be

a last resort in those cases which cannot be modified anatomically and symptomatically by medical or other treatment.

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Alcohol and Alcoholism.—Kurt Bieling (*Der Arzt als Erzicher.*, hist 23).—The author of this article writes very exhaustively on (1) alcohol and alcoholic drinks; (2) physiologic effects of alcohol; (3) alcohol and disease; (4) alcohol and death; (5) alcohol and injuries; (6) alcoholism as to mortality; (7) heredity; (8) its prophylaxis, etc.; (9) the doctor and alcohol. He says the most important point concerning alcoholism is ethyl alcohol which is present in from 2 to 80 per cent. in all alcoholic drinks. Among other things fusel oil is one of the deleterious ingredients of the cheaper alcoholic drinks. He shows their physiological action on the gastro-intestinal tract, cardio-vascular and nervous systems and other organs, by pathological findings and experimental research. That alcohol has a predisposing and continuing influence on the cause and duration of disease of all the systems he accepts without question. That alcohol has increased the death rate of tuberculosis, typhus, and accidents five times and that it has increased the mortality of other diseases from 5 to 10 per cent. is shown by tables. He gives statistics concerning its malicious effect upon the morality and the hereditary influence of the masses. As prophylaxis he gives (1) limitation of non-distilled drinks, and (2), total abstinence. He says the medical profession must take the initiative in discouraging and interdicting the use of alcohol in order to prevent these evils and protect humanity.

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Experiments on the Mechanism of the Stomach Secretion After a Test Breakfast.—Kast (*Berliner Klin. Wochensch.*, No. 22, May 28, 1906).—From the literature on this subject and experiments on animals the author concludes that the secretions of the stomach are influenced in many ways, viz., (1) Reflex: Central stimulations by means of the subcortical centres are carried to the stomach by way of the vagus. (2) Psychic: Through a physiological corelation of many cortical centers stimulations arise which pass the impulses to the nuclei of the sensory nerves. (3) Mixed: Peripheral impulses accompanying impulses of the subcortical centers of the cortex are carried to the secretory nerves. (4) Probable reflexes through the sympathetic: The latter was proven to be present even with bilateral vagiotomy and stimulation of the abdominal organs.

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An Analysis of Forty Cases of Meningitis in Infancy.—Morse (*Jl. Amer. Med. Assn.*, Vol. XLVI., No. 25).—Morse concludes from this analysis that the comparative symptomatology of the two types of meningitis differ from the usual conception. The onset of tubercular meningitis may be sudden, with convulsions, and it may be incipient, as long as two weeks, in the cerebro-spinal type. The duration may be very short in tubercular, a week or less, and prolonged in cerebro-spinal. The temperature, pulse, respiration, mental condition, bowels, vomiting, convulsions, pain and behavior of eye muscles were practically the same. Spasms of abdominal muscles were absent in both. Neck symptoms,

paralysis, spasms of extremities, Kernig's sign, increased cerebral pressure, were more marked and constant in the cerebro-spinal form. In 5 of the 20 tubercular cases there was no history, or other findings of tuberculosis. Improvement in the symptoms and comfort was noticed after each lumbar puncture. This was only transitory and had no effect on the disease. He says a positive diagnosis between the two forms is impossible from the symptomatology and can only be made on examination of the cerebro-spinal fluid.

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The Production of Lactic Acid Bacillus in Carcinoma of the Stomach.—Sick (*Deutches Archiv. f. Klin. Med.*, Bd LXXXVI., H. 4-5).—That these bacilli are found in many other conditions aside from carcinoma of the stomach he feels satisfied. They can be cultured from the intestines in people with a decreased acidity; but they are not found in those neoplasms in which free Hcl is present. The disturbance of motility and the self digestion (autolysis) of the carcinoma are important factors for their development.

For clinical examination the presence of fatty acid is not such a certain sign upon which to make a diagnosis of carcinoma as is the presence of lactic acid.

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The Value of X-Ray Examination for the Early Diagnosis of Apical Tuberculosis of the Lungs.—Adam (*Berliner Klinische Wochen.*, June 11, 1906).—All cases in which physical examinations showed difference in precussion note, or changes of breathing, etc., more or less diffuse or circumscribed shadows were demonstrated by the x-ray. This was also present in cases in which catarrhal symptoms were found on physical examination and also in some cases in which the physical findings were negative entirely. He concludes that in those cases in which there is infiltration the conditions were discovered earlier with the x-ray than by means of physical examination. The second lot of cases in which there was a chronic infiltrating process without catarrhal symptoms, the diagnosis could be made earlier by x-ray than by physical examination. Adams concedes it would take more observations to determine by x-ray the kind of pathological process present.

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A Case of Spontaneous Gastro-Enterostomy Anastomosis.—Kern (*Wien. Klin. Wochensch.*, May 17, 1906).—This report of a very interesting case of the production of a spontaneous gastro-enterostomy by perforating ulcer of the stomach with a detailed post-mortem finding and clinical history by Kern, is as follows: Symptoms had been present about six weeks previous to death consisting of anorexia, frequent vomiting, acid eructation and pain beginning at the region of the navel and radiating into the lower left abdominal region. The findings were tenderness over the liver, retraction of the abdomen and rigidity. After two weeks a small prominence appeared in the epigastrium during inspiration, being freely movable. Stomach contents were brown in color, acid, contained fat droplets, long bacilli yeast cells and Tiechman's crystals. The vomitus contained bile at various times. Feces were fluid and brown, containing blood, and passed four times per day. Stomach

was enlarged on inflation. Kern found four other cases reported in the literature. More or less positive diagnosis of carcinoma had been made in all the cases.

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Microscopic Examination of the Stomach Contents as a Means of Diagnosing Carcinoma of the Lesser Curvature of the Stomach.—Ziegler (*Zeitschr. f. Klinische Med.*, Bd LVIII, H. 5 and 6).—Ziegler says that the induration of carcinoma of the lesser curvature causes decreased motility of the stomach. In these cases lactic acid bacillus, or the thread bacillus are found microscopically. Examination is made as usual two and a half hours after test breakfast free from lactic acid, or seven hours after a test meal showing no microscopic findings, (or two hours later), or on an empty stomach A. M. Microscopic findings show bacilli, starch muscle fibres and leucocytes on top of each other, the latter never being found in chronic gastritis, which findings demand a diagnosis of carcinoma ventriculi in an early stage (before the presence of blood, palpable tumor, ascites or glands). Lavage does not change these findings. Therefore in cases in which the stomach appears to be empty microscopically, leucocytes, food-stuff and bacilli are found in the washings and the diagnosis of carcinoma of the stomach is indicated. He was able to diagnose two cases of beginning carcinoma of the stomach by this method.

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Chemistry of Secretions of Stomach With Special Investigation of Saldmon's Test for Carcinoma of the Stomach.—Reicher (*Archiv. Verdanungs Krankheiten*, Bd. XII, 3).—Reicher in repeating Salomon's test for carcinoma of the stomach on 23 cases, of which 5 were carcinoma; 4 were achylia; 3 chronic catarrh; 2 chronic ulcer centricula; 3 normal; demonstrated Salomon's test positive in 7 of which 4 were carcinoma; 2 achylia and 1 subacidity. The test recommended by Salomon is as follows: (1) Patient receives fluids, A. M., and fluids and food free from albumen at 2 P. M. (2) Stomach is washed clean 9 P. M. (3) Abstinence of everything during night. (4) Stomach lavage twice with 400 cc. physiological salt solution next A. M. (5) This solution is tested with Esbach's and Kjeldahl's method for total solids. Salomon's conclusions are as follows: (1) In all cases of carcinoma of the stomach Esbach's reagent produced a flocculent precipitate and Kjeldahl's method showed more than 25 mg. total solids per 100 cc. (2) The majority of the other stomach affections (nervous dyspepsia, chronic gastritic, gastroptosis) produced only at most a slight cloudy precipitate with Esbach's and 16 mg. Kjeldahl. (3) These findings (as in 2) were also present in chronic ulcers. Fresh painful ulcers were not examined. (4) When no flocculent precipitate was present with Esbach's, ulcerative processes in the stomach were thought improbable. Reicher gives the results of Siegel, Berent, Gutmann and Richtenstein, all of which have shown more or less uncertainty of this method.

He shows that this reaction can take place in the presence of serum albumen, serum globulin, albumosen, peptones, nucleo-proteids, purin-bases, mucin and mucin-like bodies as all these are precipitated by Esbach's reagent.

By numerous experiments he shows the influence of each one of these products on this test and points out many errors and false deductions to which it is subject.

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Diabetes: Etiology and Treatment.—Burwinkel (*Der Arzt als Erzicher,* hist. 24).—Burwinkel says that in 400 cases by French, 206 occurred between 40 and 60, 5 between 1 and 10, 42 between 30 and 40, 70 between 40 and 50, 2 between 60 and 70, 29 between 18 and 20, and 5 after 70. It has been present at seven months and at 81 years. Males to females is 3-1. Females in younger ages, especially during the menopause. He says that diabetes should be classified as a disease of metabolism or a constitutional disease; that no localized cause (?) has yet been established; that the normal urine contains a trace of sugar and blood; that if from 50 to 200 gms. of glucose is introduced into an empty stomach the urine contains sugar without the presence of organic disease. It is also normal in pregnancy and a few days after birth. That it is present in poorly nourished people (Hopp-Schiller); that shock and anxiety (Von Noorden), intoxications, carbondioxide, morphine, amylnitrite, alcohol and blue saure produce glycosuria. Etiological factors are heredity (gout, adiposes, uric acid diathesis and neurosis), alcoholism, sailors and people whose diet is composed mostly of sweets and carbohydrate; infections of the pons and fourth ventricle and cranium (tumors, hemorrhages, softening, epilepsy and apoplexy). The affections are also frequently accompanied by emaciation and other symptoms of diabetes. Psychical disturbances, as fright, etc., and changes in the pancreas. People of the upper class seem to be predisposed. He reports a very interesting case of a hysterical woman who injected sugar into her bladder in order to simulate this disease. Among the atypical symptoms, weakness, malaise and loss of physical energy may be the only complaint for a long time. Contrary to the rule, decreased appetite, distension of the abdomen, vomiting and irregular bowel movements are sometimes early symptoms. Patients often complain of tape worm symptoms, or rheumatism and constant pruritis. Diabetic rhinitis sometimes causes the most disturbing symptoms and in children incontinence of urine. He says it is not uncommon to have a diabetes cause nephritis and also have sugar in the urine in a case of contracted kidney; that angina pectoris and phthisis occur as complications of severe forms of diabetes. As to the course Seegen observed no cures in 400 cases treated by Karlebab. Naunya and Wientric considered the prognosis as to cure unfavorable. Cantim reported 50 entirely cured in 218 cases. Young persons are specially liable to short, rapid course. Slow progression is a favorable sign. Excessive exercise and mental exertion frequently cause death by coma. Death is sometimes caused by secondary conditions. As to prophylaxis and treatment, he considers diet as most important. Large amounts of water are harmful; fresh air and a general hygienic condition of the skin are necessary. Mental control is absolutely indicated. Constant medical observation is necessary. Climate and environment are especially helpful in this disease. He recommends the Austrian Rivera, Sicily, Algiers, etc., in the winter for their climate. Vichy and the waters from Schelein and Tomas (Germany), Nanhein, Karlsbad and the baths in those places are specially recommended.

# PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

A FUNDAMENTAL ERROR IN CURRENT ATTEMPTS TO APPLY PHYSICAL CHEMISTRY TO SERUM PATHOLOGY.—Manwaring (*Jl. of Infectious Dis.*, Vol. III, No. 4).—The application of the law of mass action on immunity reactions, although on general theoretical grounds long since shown to be not justifiable (by Nernst and others), continues to play a part in the discussion of the explanation of the qualitative and quantitative relations between antibodies and antigens. While Arrhenius, Madsen and others continue to search for a formula which will show that the reactions can be dealt with after the mass action law, to none of their opponents has it occurred as yet to make any such attempt futile, *a priori*, by applying to facts experimentally established, which nobody doubts and from which even the physical chemists start as a principle, a scrutinizing inquiry as to whether they could exist if immunity reactions took place after the fashion of the reaction between weak acids and bases. Manwaring has done this in such a plain way that even one not intimately acquainted with the details of the conceptions can easily grasp the conclusive weight of his reasoning. As is well known the reaction between weak acids and bases does not lead to an absolute but only to a relative equilibrium; no equilibrium at all is established if the product of the reaction is different in state from the state of the reacting substances in the solution. If this is the case, the dissociation will continue until one of the substances is almost entirely dissociated. What occurs if a toxin and its antitoxin combine? Physical chemists themselves assume that there is an end reaction, that a certain quantity of the one can combine only with a certain quantity of the other, so that in mixtures of the two substances of quantities not corresponding there must be a surplus of the one or of the other. That this is true has been established by thousands of observations. If toxin and antitoxin unite, or an antibody with a receptor, the union is firm in spite of the presence of free amounts of one of them. No dissociation occurs and it is futile to assume that it may exist, though acting so slowly that it is not noticed in the time taken for an experiment. Opposed to this view is the fact that the period in the determination of the valency of diphtheria antitoxin amounts to four days, and, with any quantity and any combination of both substances, is mathematically the same in all cases. If the interaction of two such substances were that of a weak acid on a weak base, with the production of a third substance heterogenous in state, we would not observe the constancy of proportions on which all modern serum studies are based and which led Ehrlich to establish the law of multiple proportions obtaining to a high degree for the strong acids and bases. The injection of a neutral dose of toxins and antitoxins might possibly lead to intoxication, as through dissociation of the mixture within the fluids of the organism the antitoxin would be constantly liberated, as would also the toxin, and it depends altogether upon the greater number of receptors for each of them which one will finally predominate. This certainly is

in favor of the toxin. This way of carrying the law of mass action into the explanation of immunity reaction is a *contradictio in adjecto* as it is based upon principles and facts by their very nature opposed to it. Physical chemistry cannot judge the processes that are induced by substances not yet isolated. That such substances exist and that their action cannot be the consequence of merely physico-chemical effects, is shown by their specificity and their quantitative reactions with each other.

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The Enzymes in Phagocytic Cells of Inflammatory Exudates.—Opie (*Jl. of Experim. Medic.*, Vol. 8, No. 3).—The work of Opie, only the conclusions of which can be mentioned here, is exceedingly interesting, biologically and morphologically. In the latter it is a step forward in the much discussed origin of the different forms of leucocytic elements, indirectly confirming the doctrine of Ehrlich of the genetic difference of the polynuclear and mononuclear cells present in the circulating blood. The biologic difference between the two classes Opie has found is so remarkable that a genetic difference becomes at least highly probable. They vary in the character of the ferment substances they contain and that enables them to act by phagocytosis as a factor of elimination of superfluous or obnoxious material in the organism. They do this by ferment action; the specific substances were isolated by Opie and investigated as to their enzymotic characteristics. His results are contained in the following words:

"Corresponding with the two types of phagocytes, one the polynuclear leucocyte with fine granulations, the other large non-granular cell derived from lymphoid tissue, there are two enzymes characterized by their ability to digest proteid, the one in a neutral or alkaline medium, the other in an acid medium. I have shown that the enzyme which is active in the presence of alkali occurs in the bone marrow and that the bone marrow, unlike the liver, spleen, kidney and other organs, digests proteid more actively in an alkaline than in an acid medium. Since the polynuclear leucocytes with fine granulation—the neutrophile leucocytes of man—are found in the bone marrow, this enzyme doubtless has the same origin and may be designated leucoproteose. The name lymphoproteose may be given to that enzyme which is contained in the large mononuclear phagocytes since these cells have their origin in lymphoid tissue."

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The Demonstration of Precipitable Substance of Cow's Milk in the Blood of Atrophic Infants.—Bauer (*Berlin. Klin. Woch.*, 1906, No. 22).—The question whether genuine proteid can penetrate undisintegrated the intestinal mucosa of infants has been the object of many investigations and experiments. Behring's suggestion that they could pass through the epithelium of the intestine of young animals stimulated Ganghofner and Langner to experiment on dogs, cats, rabbits and kids; they found by the precipitin reaction that the presence of foreign proteids ingested could be demonstrated in the blood of the animals during the first week after birth. In older animals a lesion of the intestine, produced artificially, had the same result. Hamburger and Uffenheimer, who worked in the same direction, had only negative findings. Schlossman, however, stated that he had found even in the blood of infants precipitins against the

milk of the mothers that nursed them. Bauer obtained positive results in infants suffering from atrophy. The contradictory findings were obtained by the precipitin reaction introduced by Wassermann, Fisch and Bordett. Bauer employed the method based on Moreschi's investigations on complement destruction, which forms a much finer indicator of the presence of amboceptors or antigens. By this method he could, in a case of infantile atrophy, demonstrate the presence of extraneous proteids within the blood. The method is easy in application and if used more widely will soon establish whether such a transition of genuine proteid into the organism of the infant is at the base of the obscure processes leading to infantile atrophy. Perhaps anatomically it may be found what is the histologic condition of the mucosa permitting such transition.

## DIAGNOSIS.

IN CHARGE OF

ALBERT E. TAUSSIG, M. D.

THE SIGNIFICANCE OF THE PHLORIDZIN TEST.—G. Kapsammer (*Arch. f. Klin. Chir.*, Vol. LXXIX., No. 3).—The observation of the glycosuria following the injection of phloridzin has not fulfilled all that was expected of it in the determination of renal sufficiency or insufficiency. Kapsammer, however, believes that in one respect the method is trustworthy and useful. If the urine contains sugar 10 to 15 minutes after an injection of phloridzin, one kidney at least is functionating properly. If the sugar begins to appear in the urine 30 minutes or more after the injection, we may infer a serious disturbance in the function of both kidneys. If no glycosuria occurs 45 minutes after the injection, the function of both kidneys may be considered so gravely impaired as to contraindicate a nephrectomy.

FUNCTIONAL DETERMINATION OF THE EFFICIENCY OF THE MYOCARDIUM.—Graeupner (*Deutsch Med. Wochenschr.*, 1906, No. 26).—In the prognosis and treatment of cases of heart-disease the determination of the efficiency of the myocardium is of the greatest importance. In a very interesting article, the writer discusses a method, based on the observation of several hundred cases, which has given him good results. By means of the Riva-Rocci sphygmomanometer he determines the arterial blood pressure before and after the performance of a definite amount of muscular work. The healthy heart reacts with a rise of blood pressure, that quickly returns to the normal. In heart-disease with an efficient myocardium there may be a fall of blood pressure as a result of work, but before long there is a rise which carries the pressure to a point higher than before the work was done, whereupon it gradually drops to the normal again. When, however, the heart muscle itself is inefficient this secondary rise in pressure does not take place. At the conclusion of the muscular work, the blood pressure is found to have fallen; it returns more or less slowly to its original level. In general, the smaller the

amount of muscular work that will produce this fall of blood pressure and the longer the interval until the pressure has again been restored to its original height, the less efficient the heart muscle. The method, it will be seen, involves the determination of the blood pressure before the experiment, immediately after its close and then repeatedly at short intervals until the pressure has again attained its original level. Accurate results are obtainable only when the muscular work is measured by means of an ergometer and when the patient has become somewhat accustomed to the exercises so as not to do them with unnecessary effort. The writer has found that the work which involves the least tax upon the myocardium consists in extension against slight resistance of the leg (M. quadriceps) in a half recumbent posture. Flexion of the same limb in the same posture involves much more cardiac effort. Flexion and extension of the arms against a graduated resistance involves somewhat more cardiac effort than extension of the leg. Exercises which necessitate fixation of the thorax tax the myocardium most of all. In this manner, by means of a graduated series of exercises, an almost quantitative estimation of the myocardial efficiency seems possible. The method is, of course, intended not to replace but only to supplement a careful physical examination.

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A New Reagent for the Detection of Occult Blood in Stomach Contents and Feces.—Boas (*Ztralbl. f. inn. Med.*, 1906, No. 24).—The importance of the detection of occult blood in stool and stomach contents is generally recognized. None of the usual methods are, however, quite satisfactory for clinical purposes. Boas has for some time been using a reagent which has for years served in milk laboratories to distinguish raw, boiled and pasteurized milk, as goes under the name of v. Storch's reagent. It consists of a very dilute solution of p-phenylendiamin and the subsequent addition of hydrogen dioxide and, with certain modifications, has shown itself useful for the recognition of digested or otherwise altered blood.

The method is as follows: The suspected stool or stomach contents is rubbed up in the usual manner with a very little glacial acetic acid (about 20 drops); it is then shaken up with ether and to the etherial extract are added 1 or 2 drops of a very dilute solution (1:200) of p-phenylendiaminhydrochlorate. As the reaction is very greatly hindered by an acid reaction it is well to add also 1 ccm. of a half normal alcoholic solution of potassium hydrate. Finally 10 to 15 drops of 3% hydrogen peroxide are added and the mixture briefly shaken. In the presence of occult blood an olive-green ring appears almost instantly at the junction of peroxide and etherial extract sharply contrasting with the fluid above which is colored violet by the reagent. Unfortunately this green color is very evanescent and soon gives place to a violet color, more or less dark, according to the amount of blood present. It is the green color, however, that is characteristic of blood.

The test as above described can evidently not be used in the presence of large quantities of bile pigment or of urobilin. In these cases the stool should be repeatedly extracted with alcohol ether. The test if done as above, with the residue, is trustworthy.

As regards the delicacy of the method, it is quite as sensitive as the guaiac—turpentine or the aloin tests and is inferior in this respect only to the benzidin and the spectroscopic methods. In contrast to the former of the last two methods, however, the reagent will keep indefinitely and it is more convenient than the latter in that great amounts of suspicious material are not required. While the method will hardly supplant the aloin and guaiac tests, it apparently deserves to be placed by their side for confirmative purposes.

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Contribution to the Differential Diagnosis of Exudates and Transudates.—Landolfi (*Riv. cit. di clin. med.*, 1905, No. 42).—Exudates may be readily distinguished from transudates as follows: If potassium iodide be administered, it will appear in the ascitic or other fluid in large quantities if the fluid be a transudate, as a trace only on the other hand is the latter be an exudate. Conversely, if the iodide be injected into the affected serous cavity, it will be rapidly excreted by the urine, etc., if the fluid be a transudate but not if it be an exudate.

Salicylic acid, antipyrin and pyramidon gave similar results, but did not prove as useful, for this purpose, as potassium iodide.

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## THERAPEUTICS.

IN CHARGE OF

WALTER BAUMGARTEN, M. D.

The Therapeutic Value of Antithyreoidin in the Treatment of Exophthalmic Goitre.—Elsner and Wiseman (*N. Y. State Jl. of Med.*, June, 1906) draw conclusions, based on 12 cases of typical and a greater number of atypical exophthalmic goitre treated with antithyreoidin, which state very fairly what may be expected of the remedy. We therefore quote them. . . . . .

3. We are positive that antithyreoidin is a remedy which can be used for the relief of the annoying and alarming symptoms of exophthalmic goiter in typical and atypical cases. The greatest improvement is found in the relief of the tachycardia, precordial distress, and tremor. This improvement is hastened by rest in bed and close attention to diet. *Rest in bed and diet alone, without the administration of antithyreoidin, will not lead to the same degree of cardiac comfort.*

4. Improvement of one or more of the symptoms of the disease is likely to follow within from three to seven days after the beginning of the use of the remedy. If there is no improvement of the symptoms after from three to four weeks of administration, the chances are against ultimate benefit from the prolonged use of the serum. In serious cases it will be necessary to continue the treatment during many months. In all cases after the disappearance of the subjective symptoms, it will be wise to administer unsalted butter and cream. To replace the phosphorus which is lost by the excessive excretion of phosphates in the urine, some nucleo-proteid is given—protylin was used in the cases reported. Finally

a liberal quantity of proteid is given in the form of eggs, meat, fish and cheese.

Alt reports most striking improvement even in very serious cases. With gain in weight (which ranged from 30 to 56 pounds) comes reduction in the pulse rate, disappearance of the tremor and of other nervous symptoms, and finally, in all cases, a diminution in the size of the thyroid. The improvement has so far (2 years) been permanent.

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Dietary Control of Basedow's Disease.—Alt (*Muench. Med. Wochschr.*, June 12, 1906, p. 1145) has conducted experiments in the metabolism of patients afflicted with exophthalmic goitre, and found that the pathological changes in function consist of sodium chloride retention, diminution in tolerance for carbohydrates (as appears from the presence of sugar in the urine after relatively small quantities of carbohydrates), and a much exaggerated excretion of phosphoric acid. In addition to this a greatly increased nutritional value is required by these patients to meet the active katabolic changes, in some cases as much as 100 calories per kilo of weight.

On the basis of these observations Alt places these patients on a milk diet, in quantity not containing more than 4 g. of sodium chloride in the 24 hours. This small quantity of salt is continued indefinitely; meanwhile the salt retention is relieved and a greater tolerance for salt is gradually developed. Carbohydrates (salt free) are added to the diet in 3 or 4 days and gradually increased until the limit of tolerance (indicated by the appearance of sugar in the urine) is reached. The weight usually falls until sufficient caloric-values have been reached. This is usually accomplished after the tolerance for carbohydrates has been reached by the addition of fats,—antithyreoidin during periods varying from four to eight weeks at intervals of two or three weeks.

5. Cases without marked goiter, with slight exophthalmic, tremor, and the Graeffe symptom, have yielded most readily to the antithyreoidin treatment. The enlarged thyroid has become perceptibly small, but has not returned to the normal size.

6. Exophthalmos, in our experience, continues to be the most rebellious symptom, never yielding entirely to antithyreoidin treatment.

7. Nervous symptoms usually yield as the heart becomes slower. The many fears which take possession of these patients are also relieved at the same time.

8. The majority of our patients have increased in weight. Patients who have taken antithyreoidin during a long period feel when the serum is discontinued as if they had been robbed of a food to which they are entitled.

9. In no case have we had occasion to regret the trial of antithyreoidin. It has always proved itself harmless. It may be given during pregnancy without fear of injuring the mother or fœtus. Hypertrophied and dilated hearts offer no counter-indication to its administration.

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Principles of Feeding in Typhoid Fever.—Kinnicutt (*Boston Med. and Surg. Jl.*, July 5, 1905) has compared on statistical grounds the mortality and frequency of relapse, hemorrhage, and perforation in cases of

typhoid fever nourished on liquid diet, and in cases nourished on a mixed soft and solid diet. The following is a summary of his statistics which have been gathered on the one hand from the Massachusetts General Hospital, the Presbyterian Hospital of New York, the Monsall Fever Hospital and the Kief Military Hospital, and on the other from the reports of the Johns Hopkins Hospital, the Presbyterian Hospital of New York the Massachusetts General Hospital, the New York Hospital, and the Presbyterian Hospital of Chicago:

LIBERAL DIET.

| *Cases.* | *Relapse.* | *Haemorrhage.* | *Perforation.* | *Mortality.* |
|---|---|---|---|---|
| 733 | 48-11.38% | 35-4.77% | 10-1.36% | 60-9.47% |
| | Basis of 325 cases | Basis of 733 cases | Basis of 733 cases | Basis of 633 cases |
| | | LIQUID DIET. | | |
| 4,654 | 507-10.38% | 411-8.83% | 111-2.40% | 491-10.55% |

The liberal diet includes milk in all forms, soups of all sorts, beef juice, gruels, eggs, scraped beef, minced lean meat, soft parts of oysters, crackers, toast, puddings, blanc mange wine jelly, apple sauce, macaroni. In the Kief Military Hospital a roll, one-half of a cutlet and some boiled meat forms part of the daily routine diet.

This study, Kinnicutt believes, does not jutisfy the fears and the widely accepted teaching that solid food leads to more frequent intestinal accidents in typhoid fever than the liquid diet. His figures, indeed, strongly argue the reverse. They emphasize a growing impression that diet *per se* has little to do with relapses and intestinal complications. Kinnicutt pleads for a dietetic management "adapted to the individual case and based upon the recognition, (1) that while the digestive function in many cases of the disease is unquestionably seriously impaired, *frequently* the impairment is not a serious one; (2) that a clean tongue, a true appetite, hunger, should be accepted as guides for the cautious employment of a more generous diet; (3) that the individual rather than the disease is to be considered and treated."

## ORTHOPEDICS.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

JOINT MANIFESTATIONS IN THE HEMOPHILIA.—Ryerson (*Jour. Amer. Med. Assn.*, June 23, 1906).—Fifty years ago, physicians clearly recognized the frequency of joint lesions in hemophiliacs, but were unable to agree on the pathology of these lesions. It was not until the convincing paper of Kœnig was published, in 1892, that the profession at large awakened to the true cause of the arthritis. The resemblance of these joints to tuberculosis is so close that at times they have been treated by

eminent authorities as tuberculous lesions. It is probable that many cases go unrecognized, and in fact, in a case of effusion into the knee-joint, following a moderately severe trauma with no rise in temperature and no great pain, it may be impossible to make the correct diagnosis without aspiration of some of the fluid.

The author divides the affection into three stages. In the first stage there is simply the presence of free fluid blood in the joint. This is accompanied by moderate brownish or yellowish discoloration of the capsule and synovial surfaces. It is absorbed and joint function becomes normal. The second stage is where repeated hemorrhages have taken place in a single joint, and distinct pathologic changes have resulted. The capsule becomes thickened and succulent, and much darkened. The third stage is the stage of adhesions, which results in more or less complete ankylosis. The fluid in the joint is absorbed and only the thickening of the synovial surface and the ankylosis remains, with usually a marked flexion of the joint.

The treatment in the primary stage should be such as will promote the absorption of the effused blood, aspiration with a fine needle, the injection of adrenalin solution and a pressure bandage applied for five or six hours. In the later stages, when there is the tendency to flexion, traction should be applied to the joint. Ankylosis infection may be corrected by the Goldthwaite genuclast, or by forcible manual redressment. Any cutting operation should be shunned like the plague.

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The Diagnostic Value of Radiography in Fractures.—Don (*Scot. Med. & Surg. Jour.,* June, 1906).—The author states that there are means of overcoming most of the difficulties in radiography used for fracture diagnosis. The radiographer must know his osteology and be familiar with the principal surgical bony lesions, or, alternatively, the surgeon himself must direct the manipulations of the electrician to get the picture he desires. The secondary and adventitious rays must be cut off as far as possible by diaphragms of some material impervious to the X-ray. The current through the tube in the wrong direction, that is, from cathode to anode, must be choked by a valve-tube, or other contrivance of a similar nature. This is not necessary if a static machine is used. Fractures in or near joints are very difficult to reproduce well in radiograms and more than one plate may have to be taken. The muscles about the shoulder and hip joints in muscular men are sufficient to obscure almost completely a bony lesion, and to this is often added the overlapping of the bones themselves.

The paper is illustrated with diagrams, which show the proper position of the tube to obtain the best results.

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Torticollis—Wry-Neck.—Tubby (*Brit. Med. Jour.,* June 16, 1906). There are two chief varieties, the true and the false. The true form is of two types, the fixed,—the wry-neck of childhood, or the congenital form, —and the reflex, the spasmodic and the acute forms. The author states that acute wry-neck is an acute rheumatism of the neck, which is amenable in most cases to medicinal treatment, but in a minority may be the beginning of the spasmodic form. The spasmodic form may be reflex, due to

irritation. The usual cases have enlarged glands, from carious teeth or other irritation. It disappears as soon as the cause of the spasm is removed. The fixed form is due primarily to a change in the sterno-mastoid, and then to secondary contraction in the trapezius and other muscles of the neck and deep facia, and lastly there are distinct alterations in the shape of the cervical spine. The pathology shows that there is always a fibroid nature, the muscle-fibre being replaced by dense cicatricial tissue.

As to the asymmetry of the face, the author is of the opinion that it is due to the pressure on the carotid vessels which pressure allows less blood to go to the affected side. This may be proven by placing a delicate surface thermometer on the contracted side of the face where it is found that the temperature is less than on the uncontracted side. He also points out that there are three curves in the spine: one cervical, which is primary; second, a long compensatory curve in the dorsal region; and, third, a corresponding compensatory curve in the lumbar region. The treatment of this form is operative, and may be done in one of two ways: one, which is unsafe and unwise and unsatisfactory, viz.: subcutaneous tenotomy; and the other, which is perfectly safe and overcomes the deformity, that is, open operation and thorough division of the contracted muscle.

As to the spasmodic form of torticollis there is evidence accumulating to show that it is due to some form of cerebral lesion, probably due to sclerotic changes in the vessel. Many of these cases have some history of mental aberration in their family. They go through a large amount of treatment, all of the remedies proving of no value whatever. Up to the year 1888 the best form of treatment for these cases was the stretching or cutting of the spinal accessory nerve. To Professor Keen and Dr. Gardner, however, is due the credit jointly for devising a radical operation, which consists in cutting down on the posterior primary branches of the cervical nerve and removing a portion of them. By this operation you deprive the back part of the head of sensation, and also the skin of the neck, and you break the vicious reflex circle which runs through the sensory nerves. At the same time you cut out the motor supply to the posterior cervical muscles and so stop the vicious movements.

False torticollis is associated with spinal caries and follows cicatrices of burns and wounds in the neck. The neck is twisted in some cases in a way similar to that seen in true wry-neck.

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## GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. JOHNSON, M. D.

THE SURGICAL ASPECTS OF ANURIA.—Cumstor. (*Am. Journal Urology*, July, 1906).—The author classifies the condition giving rise to anuria into those resulting from reflex action, in which suppression of secretion is produced by irritation in some other organ, those in which there is some obstruction in the urinary canals, such as occurs in certain infectious processes, and those due to nephritis, renal calculi, and torsion or compression of the ureter. Cases of purely nervous anuria can be met with in which the renal glands are normal and in this class hysterical

anuria belongs. This form usually arises in neurotic individuals, or in diseases or anomalies of the female genito-urinary organs. The splanchnic nerve becomes irritated and from this arises a cramp-like contraction of the renal arteries, while the flow of blood to the kidney completely ceases. Hysterical cases do not give uremic symptoms if vomiting and diarrhea can be excluded.

The author considers the condition giving rise to anuria separately and cites cases illustrating each. Speaking of renal calculus, the most frequent cause of anuria, he says it should always be borne in mind that the diagnosis of these cases can ordinarily be made from the history, because these patients generally have been previously troubled by urinary symptoms, such as the passage of gravel, or a calculus. Colicky pains usually precede the passage of a stone, but every symptom may be lacking, the anuria suddenly developing without warning. The possibility of both ureters being obstructed should not be overlooked. In this case it is most important to determine the kidney last affected, which is usually the one that was the seat of the last pain, is the most tender on palpation, and over which the abdominal walls present the greatest reflex rigidity, and should be the one selected for operation.

Nephrotomy should be performed early. Israel advises not waiting longer than 48 hours. Legueu showed in 1891 that the number of cases of calculus anuria where operation was undertaken that recovered amounted to 66.6 per cent., while of those left alone only 25.5 per cent. recovered.

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The Role of Lumbar Puncture in the Treatment of Nervous Uremia.—Carrierére (*Ann. des Mal. des Org. Urin.,* June 1, 1906; *Archives générales de médecine,* 12th Sept., 1905).—Since the day when Quincke described lumber puncture our knowledge upon the cephalorachidian fluid has increased very much. From the first Quincke thought the evacuation of this fluid would be of some service in the treatment of nervous uremia. Of those who have followed his teaching, some have obtained good, and others unfavorable results. The author gives his experience with eight cases, in four of which the results were absolutely negative, while in the other four they were favorable. He reports in detail the four favorable cases, and arrives at the conclusion that lumbar puncture, associated with the usual medications for nervous uremia, gives encouraging results when the subjects are young, in cases where there is a question of acute nephritis, and where the uremia has existed only for a short time.

In discussing the mode of action of lumbar puncture in nervous uremia, he mentions three theories at present advanced for the explanation of nervous uremia. The first, that of Traube, attributes uremia to cerebral edema; the second holds that it is due to cerebral compression by the cephalorachidian fluid, of which the quantity is increased; the third attributes the uremia to the irritation of cerebral cortex by the hypertoxic blood, or the cephalorachidian fluid, equally overcharged with toxic principles.

The author has found cerebral edema to actually exist at autopsy in two cases out of four. From this and the fact that osmosis does occur

between the blood and the cephalorachidian fluid, he concludes that cerebral edema is theoretically very logical and perfectly admissible in a good number of cases of nervous uremia. Comparing the pressure of the cephalorachidian fluid in normal and uremic individuals, he finds that the tension in the latter is much increased in some cases. From miscroscopic examination of the brain tissue removed post-mortem in uremic cases the author finds marked changes in the tissues, such as fragmentation of the nuclei and vacuolization of the cells, etc.; from which he concludes that while the blood may be over-charged with toxic substances, yet the accidents of nervous uremia are largely due to the hypertoxia of the cephalorachidian fluid, and this hypertoxia he has demonstrated through animal injection.

The exact nature of these toxic agents is still very obscure. There are some cases, however, in which the exciting cause of the uremia is cerebral edema, others in which it seems to be due to compression by the cephalorachidian fluid, and others still in which the hypotoxicity of this liquid cannot be doubted. Therefore, lumbar puncture seems to be applicable in these cases, whatever the exciting cause.

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Clinical Notes.—Kreissl (*Am. Jour. Urology,* July, 1906).—Two very interesting cases are reported. The first is one of abdominal and vaginal ureteral fistula, closed by catheter left in the injured ureter for thirteen days. The fistula was discovered six days after a hysterectomy had been performed, when a strong ammoniacal odor upon the dressings led to investigation. Urine leaked freely through the laparotomy wound and vaginal vault for the following eight days. Cystoscopy showed a normal bladder and left ureteral os, but the right ureteral orifice wide open and motionless. A No. 7 French catheter was passed into the right ureter and seemed to meet with some obstruction about 4 inches up, which was easily overcome with slight pushing, the catheter passing up to the renal pelvis. Two hours after the catheter had been placed the dressings covering the fistula were dry and leakage through the vaginal vault had ceased. The catheter was left in situ for thirteen days and the renal pelvis irrigated three times daily with antiseptic solutions. The bladder was also antiseptically treated. The urine at first contained a low percentage of urea, a large quantity of pus and albumen, and was of low specific gravity, quantity 24 ounces. Temperature and pulse remained normal. No pain was complained of, and the patient suffered very little inconvenience from the retained catheter. On removal of the catheter the ureteral os was found working normally and the urine had returned to almost normal. This case is instructive for several reasons. It demonstrates again the value of the ureter catheter for therapeutic purposes on suitable occasions, as in this one where it returned to perfect function a damaged ureter and saved a kidney which otherwise, perhaps, would have to be removed to cure the urinary fistula. It further shows the fallacy of the statement that in transverse lesions of the ureter the os will be seen absolutely motionless, while in lateral injuries the orifice without emitting any urine will open and close, although not so complete and regular as under normal conditions.

The second case reported is one of primary tuberculosis of the bladder

and lower end of the ureter cured by local treatment. The patient, a robust girl, aged 18, gave the following history: Following a severe cold contracted during menstruation, frequent and painful urination set in. Rest in bed and internal medication failing to relieve, bladder irrigations were added, which made the condition decidedly worse, terminal tenesmus occurred, the urine became more turbid and had to be voided every 15 or 30 minutes. Cystoscopic examination showed a number of typical small sized tubercles in the trigone and a few in the corpus above the inter-ureteric ligament. The right ureteral orifice appeared normal the left was surrounded by an elevated, cone-shaped, infiltrated and congested area (close to the orifice a tuberculous ulcer was established); the rest of the bladder seemed healthy. On passing the first three inches of a catheter into the left ureter an almost creamy fluid containing much pus was obtained. Gradually passing the catheter higher up the urine became clearer, and about six inches from the orifice the urine obtained was transparent. Tubercle bacilli were found both in the urine from the bladder and the pus from the lower end of the ureter. This finding was confirmed by inoculation of a guinea pig. The treatment consisted of 5 per cent. iodoform guaiacol suspensions, alternating with bichloride solutions in the bladder and in the lower segment of the ureter. Under this treatment the subjective symptoms improved rapidly and the ulcers healed within a month, while it took the tubercles about two months longer to disappear. Simultaneously with the latter the tubercle bacilli disappeared from the urine, which became quite clear and has remained so.

## GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF

HUGO EHRENFEST, M. D.

DISTURBANCES OF VISION DURING LABOR.—Bauer (*Monatschr. f. Geb. & Gyn.*, Mai. 1906).—The writer records an interesting case of sudden blindness during childbirth which offers unusual difficulties for diagnosis. The patient was a rather healthy woman of 30 years. No noteworthy disturbance during this, her eighth pregnancy, with the exception of some headache accompanied by nausea during the last three weeks. Full term child is expelled after a few pains, when patient suddenly realizes that she cannot see. On the fifth day the total blindness passed into a hemianopsia. Gradual return of vision and by the end of four weeks practically no trace of hemianopsia left. The only anomalies which could be detected by means of the ophthalmoscope are a transient edema of the retina, congestion of the veins with some blanching of the right papilla. For nine days subsequent to labor the patient showed cerebral symptoms, her sensory most of the time being cloudy. During this time she ran a high fever. At first the urine contained a large amount of albumen, which, however, soon disappeared. In reviewing the literature on the subject the writer points out that in seven cases of this sort the amaurosis was ascribed to an eclamptic or uremic toxemia. In seven cases, recorded re-

cently, the possibility of an existing eclamptic condition without convulsions is taken into consideration. The writer is willing to accept this latter mode of explanation for such a sudden blindness. He explains the transition in this case of the complete blindness into a hemianopsia by a gradual improvement of the toxic paralysis which at first affected all tracts of the central optic nerve, later only those of the right hemisphere.

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Etiology and Therapy of Eclampsia in the Puerperal State.—Liepmann (*Zentralbl. f. Gyn.*, 16 Juni, 1906).—The writer briefly sums up his views on eclampsia as follows: Eclampsia is an intoxication. The toxin originates in the placenta, most probably as the result of an insufficient synthesis of maternal albuminoid substances secreted by the syncytium. If the maternal organism is incapable of neutralizing these toxic albuminoids by the prompt production of antibodies, it becomes poisoned. The argument has been made against this theory that it does not seem to explain the cases where the first eclamptic convulsions occur after labor, i. e., after the expulsion of the placenta. This argument, in Liepmann's opinion, is not acceptable. Experiments and similar observations with bacterial infection have shown that the liver is capable of retaining a large amount of such toxins and later may not be able to neutralize them. They may then enter the maternal system and lead to convulsions subsequent to the expulsion of the ovum. These cases need a special form of treatment, which in the main is symptomatic, directed against the most prominent symptoms. The writer gives the following diagrammatic outline of the treatment of post-partum eclampsia considered according to the various dangers caused by convulsions in that state.

The eclamptic poisons injure: (1) The *Renal Parenchyma*, leading to a reduction of the total amount of urine, which contains albumen and casts. *Treatment*: Hypodermoclysis with venesection in cases of plethora, diuretics. (2) The *Heart*, producing a quick pulse with low tension. *Treatment*: Stimulants. Caffein, camphor oil. (3) The *Brain*, resulting in coma, superficial breathing, possibly with complete paralysis of the respiratory centre, edema of the lungs, convulsions. *Treatment*: Artificial respiration, which in some cases has to be kept up for days. Stimulation with cold water. Cold packs. Very small amount of narcotics, preferably chloral hydrate in 45 grain doses per rectum. Morphia only if patient is very restless, then in one-half grain doses.

The feasibility of such a therapy is illustrated by the detailed records of a few cases. Liepmann is convinced that this therapy with quick delivery in all cases in which the convulsions appear before labor is bound to reduce the present mortality of eclampsia.

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Hernia of the Uterine Adnexa, with a Personal Experience of Seven Cases.—Carmichael (*Jour. of Obst. and Gyn. Brit. Emp.*, July, 1906).—Inguinal hernia in the female is associated with hernia of the uterine adnexa in a very large proportion of cases. This association may be expected in from 25 to 30 per cent. of all cases. Out of 23 cases operated upon by the author, the ovary or Fallopian tube, or both, were present in the hernial sac in seven cases. Of a total of 76 cases of inguinal hernia operated on in female children in the Edinburgh Royal Hospital,

30 had contents in the sac, and of these 24 comprised ovary or tube, or both. Although isolated cases are from time to time recorded as being of rare occurrence, one is forced to consider ovarian hernia as one of the most common, if not the most common as compared with hernia of any other abdominal viscus. Of the seven cases operated upon by the writer, three were bilateral. In young babies (under one year) according to the statistics compiled by Carmichael, the uterine adnexa may be looked for in more than 60 per cent. of all inguinal hernias. The degree of hernia varies from that of a complete descent of ovary and tube with the broad ligament, to any partial protrusion of one or both of these organs. The younger the child the more common are the complete hernias. When the adnexa are situated in the canal of Nuck they are not as easily replaced, like a coil of intestine, for, although mobile, they are to a certain extent fixed. As a rule the tube seems to lie lower down in the sac than the ovary. That the ovary continues to functionate in its abnormal position is shown by many records in literature; even ectopic pregnancy in a hernial sac has been described by several authorities. Pathologic changes in herniated ovaries are a frequent occurrence. Acute and chronic inflammation is most common. Torsion is not infrequent. Cystic degeneration and malignant changes in later life are recorded. Several authorties report the association of hernia of the uterine appendages with maldevelopment or non-development of them, or of the other genital organs.

Most of the recorded cases of hernia of ovary and tube into the *femoral* canal have occurred in women in adult life.

## PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

THE SCORBUTIFORM SYNDROME IN INFANTS.—Bouchot (*These de Paris,* 1906; *Rev. Mens. de Mal. de l'Enf.*) says that the characteristic symptoms of scurvy are pain in and weakness of the extremities, lesions of the gums, profound anæmia, subperiosteal hematomata, and ecchymoses of the skin and mucous membranes. There are atypical cases in which one single symptom would appear to dominate the picture. In at least 25 per cent. of the cases the affection presents as a painful pseudoparalysis of one or of several extremities. There are mild cases where the symptoms appear in stages and careful examination is necessary for their elucidation and prompt treatment. The diagnosis, which is easy in the typical cases, is often very difficult in the "forme fruste," and the condition is not infrequently overlooked. One should always think of the possibility of scurvy in the presence of "disconcerting" symptoms, in artificially fed babies of the ages of two months to two years.

The study of the conditions underlying the production of scurvy leads one to the belief that the exciting cause of the disease is the presence in the aliment of some scorbutinogous poison, whose nature is as yet ill-defined. The aliment is the more apt to produce scurvy when the manipulations through which it has passed have been numerous or prolonged.

It appears thus (and the examination of the blood tends to confirm the view) that scurvy is to be regarded as a toxic infection of alimentary origin, occurring in subjects already predisposed by gastro-intestinal fermentation. It is very probable that there is some disturbance of the hepatic function, in addition, with perhaps some modification of the blood state, and a predisposition to hemorrhagic disorders.

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Anemia Infantum Pseudo-Leucaemica.—Jaksch.—As a result of their careful studies of a series of cases, and of the literature, Flesch and Sclossberger (*Archiv. f. Kinderheilk.*, Vol. 43, p. 294) conclude that this disease is a distinct entity. They concur in the opinion and position taken by Jaksch, viz., that it is a disease of early life running a clinical course like that of leukæmia, though without the post mortem findings of this condition. In addition to large splenic and hepatic tumor, there is marked adenopathy, together with oligocythemia, oligochromemia and in all cases marked leucocytosis (1:10 to 1:17).

It is probable that this disease is to be classed as being midway between a simple and a progressive pernicious anemia. They do not feel that the name ordinarily given is necessarily correct, nor do they consider this to be of prime importance. Inasmuch as the pathogenesis of the condition is not understood it would probably be difficult to find a more suitable name.

The main thing is to get a correct conception of the disease. All cases should be classed in this rubric, in which, without regard to etiology, the foregoing clinical and hematological pictures develop. It cannot be denied that this may be a toxic process. Why the great proportion of cases of rickets, tuberculosis and lues, should be followed merely by simple anemia, while in a small proportion of the cases this form of anemia ensues, it is not possible to explain at the present time.

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The Wightman Lecture of the Society for the Study of Disease in Children was delivered this year by Broca of Paris. He chose as his subject Chronic Appendicitis, and the Early Diagnosis and Treatment of Acute Appendicitis in Children (*Brit. Jl. of Dis. of Children,* June 1906). Broca believes that appendicitis is but the localization of an entero-colitis previously more extended. All cases of gastro-enteritis do not of course lead to appendicitis, as is evidenced by the rarity of appendicitis in infants and very young children, among whom gastro-enteritis is of course very common. The special form of muco-membranous enteritis is one which predisposes greatly to appendicitis, and in such cases it often happens that appendectomy does not give relief from the symptoms because it only removes one source of irritation, the enteritis remaining. The necessity for careful medical treatment in these cases even after operation is thus apparent.

Appendicitis often develops as a truly chronic process. In many cases the symptoms are vague and are those of a chronic dyspepsia. This dyspepsia is apt to be marked by gastro-intestinal atony, difficult digestion, flatulence and obstinate constipation alternating with attacks of diarrhea. In some cases habitual vomiting in the morning, without fever, is a symptom. There is a coated tongue, offensive breath, subicteric complexion, and habitual nausea. Attacks of gastralgia are common.

On examination, under careful palpation, the cecum will be found to be thickened, and at times the enlarged appendix may be felt. There is often, in these cases, slight tenderness on pressure over McBurney's point. It is, however, not to be forgotten that these symptoms may be those of beginning tubercular disease of the cecum, and at times a definite diagnosis can only be made by laparotomy.

In this class of cases, the infectious element does not play a very important role. In another class the cases run a more acute course, with fever, vomiting, coated tongue, and colic, principally on the right side. These cases may simulate the vomiting with acetomemia of childhood. Operation in these cases usually shows rather intense appendicular and periappendicular inflammation. With the ordinary folliculitis associated with an old sclerosis we find omental adhesions. These cases ought to be operated, usually in the interval, because of the danger that in some one of the acute attacks there may be severe infection, even peritonitis. It is impossible to so regulate the life of children especially of boys, that attacks may be absolutely avoided, even though it were considered possible by any regulation of life to do this. Therefore it is safer to operate all of these cases. Broca is inclined to the belief that there is, in reality, no medical treatment of appendicitis.

The rest of the lecture is taken up with a discussion of the question of the time of operation in acute cases. Broca's views are thus summed up: "Operate immediately if you are called within twenty-four hours following the onset of the acute attack. But when you are called afterwards, you must act according to the indication given by each individual case, and then with the idea of calming as much as possible the attack, before operation."

## NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

MULTIPLE SCLEROSIS, A CONTRIBUTION TO ITS CLINICAL COURSE AND ITS PATHOLOGICAL ANATOMY.—Taylor (*Jl. of Nerv. and Mental Dis.*, June, 1906).—Taylor calls attention to the fact that in America little attention has been paid to the subject of multiple sclerosis in spite of the importance that has been given to it on the continent; there it is regarded as one of the most important organic diseases of the nervous system. A list of the contributions by American writers, with the autopsy protocols, is given and the meager number is compared with the large number of cases which were reported by Muller in his latest monograph on the subject. Muller was enabled to collect 1,148 references. Eighty references have been collected since Muller's paper in 1904 and 1905. Twelve cases are given in great detail by the writer and among them there are six autopsies with careful microscopic reports. This in itself is sufficient material to merit attention and the conclusions of the author are worthy of serious consideration. Taylor arranges his conclusions under various heads, as follows: *Frequency.* In spite of the fact that multiple sclerosis has been considered a rare disease in this country, Taylor is of the opinion

that it is by far more frequent than is commonly supposed; he believes that it is one of the most common of the organic nervous diseases. If all cases in which there is a suspicion of multiple sclerosis are examined frequently, and if in such cases a post-mortem examination could be obtained, it is probable that a large majority of them would be found to show changes characteristic of multiple sclerosis. In this way it would appear that the disease is about as frequent in this country as it is in Europe. *Diagnosis and Prognosis.* The diagnosis is often impossible to make with assurance during life even in advanced stages of the disease. The diagnosis was at one time thought unwarranted unless cardinal symptoms were present. This has given place to the emphasis upon certain signs which from their occurrence are to be regarded as unexplainable upon any other grounds than that of multiple sclerosis. For example, the author lays great stress on the occurrence of unexplained spasticity and the exaggeration of the deep reflexes. If these two conditions are present in addition to the ocular symptoms characteristic of the disease, the diagnosis seems very probable. Although the diagnosis may not be possible it may often be made with probability and further detailed observation of the case may bring to light symptoms which will make the diagnosis certain. *Pathological Anatomy.* The etiology of the disease remains obscure. The hypothesis that there is a selective poison acting through the blood vessels remains undemonstrated. The process which results in the changes found in multiple sclerosis does not seem to be related to inflammation in the ordinary sense, certainly not with that found in myelitis. It is probable that the process, whatever it is, exhausts itself after spreading a certain distance from the central focus. Outside of the role of the blood vessels, the overgrowth of the neuroglia is a most vital point. The evidence seems to be growing against the assumption that there is a primary overgrowth of neuroglia. That the degeneration which is sometimes found is a direct result of the neuroglial overgrowth seems at least unlikely. The assumption that there is present in the sclerotic patches a regeneration of nerve fibres to explain the persistence of the axis cylinders is not at present necessary, especially in view of the well known fact that central fibres do not as a rule show any marked tendency to regenerate. The general conclusions to which Taylor wishes to draw attention are as follows:

The rarity of the disease in this country has been overestimated. A more careful examination of atypical cases and a more open mind in diagnosis is desirable.

The importance of observing and properly estimating minor symptoms of the disease, particularly unexplained spasticity and ocular disorders, must be emphasized.

The etiology remains obscure. The pathological anatomy is still a hopeful field for study. Present evidence points towards a primary destruction of the myeline with either a secondary or coincident proliferation of the neuroglia.

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Two Cases of Successfully Operated Spinal Cord Tumors.—Oppenheim, Borchardt (*Berl. Klin. Woch.*, 1906, No. 26).—Oppenheim describes two cases of spinal cord tumor in which the operation for their

removal was successful, and wishes to illustrate the progress which diagnosis and localization have shown in the last little while. The operations themselves are described by the surgeon. The first case offers nothing unusual except always the surprising facility which Oppenheim shows in the interpretation of symptoms. In the second case the tumor was situated strictly in the middle line, contrary to the usual situation in cord tumors, and thus produced symptoms which might have been interpreted as a part of a system disease in the cord. Oppenheim has now a series of eight cases, in four of which the operation has been successful, and in all of which the tumor was found to be correctly diagnosed and localized. He suggests further, that it is extremely probable that some cases which have been diagnosed as myletis, multiple sclerosis system disease of one sort or the other, might very well be cases of extrameningeal tumor which are favorable objects for surgical intervention. This idea should certainly always be considered in the question of differential diagnosis.

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A Case of Diffuse Encephalitis of the Pons Ending in Recovery.—Bregman (*Deutsche Zeitschr. fur. Nervenheilk.*, 5 and 6, 1906).—Oppenheim has called attention to the relative favorable prognosis of the non-suppurative form of encephalitis. The author of this paper describes a case of diffuse encephalitis of the pons region which belongs to the category of cases that Oppenheim refers to. It is important to recognize such cases clinically if possible in order to be in a position to give the prognosis that belongs to it. The case is as follows: Woman, 32 years old, presented the following symptoms: Parasthesia of the right extremities. Hyperesthesia of the right side of the body. Paralysis of the left abducens. Headache, vertigo, vomiting. Occipital pain in passive movements of the head. Divergent strabismus in right eye. Diplopia. Right pupil wider than the left, reaction normal. Paralysis of the left facial of the peripheral type. Paralysis of the left pterygoid. Anesthesia of the right side of the face. Right sided paresis. There was a steady improvement of these symptoms after two months. When the patient left the hospital three months after the appearance of the symptoms the weakness of the left abducens, slight paresis in right leg, ataxia right extremities and slight hyperesthesia of the right side of the face remained. An analysis of these symptoms does not leave any doubt as to their localization. The nature of the lesions is probably that form of encephalitis in which the purulent process is absent so that no permanent destruction of tissue remains. The etiological factors in this case are obscure unless the combination of psychical and physical trauma present in the case be taken into account.

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Clinical-Anatomical Contribution to the Knowledge of Myasthenic Paralysis.—Osann (*Monat. Psychiatrie und Neurologie.*, No. 6, 1906).—This is a further case of myasthenia gravis with autopsy to be added to the already considerable post-mortem material of this disease. The case clinically offers nothing of unusual interest with the exception of the rapidity of its course. The disease in this instance lasted just nine months. The myasthenic reaction was well marked. The examination of the nervous system microscopically showed an absolutely normal condition. Sections from the muscles showed a few small foci of lymphocytes.

There are thirty-four cases of post-mortem protocols of this disease in which the most significant finding, that of infiltration of the muscles with lymphocytes, was found in only three or four cases. Osann reviews all the literature and includes his own result in his final consideration of the pathology. He inclines to the view that the intoxication theory forms the most reasonable basis to explain the symptomatology of the disease. The further suggestion is added that the small foci of cell infiltrated muscle found in this case may be the transition stage between that and the condition found in the muscles by Hun, Link, Goldflam and Weigert.

## OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

TWO NEW OPERATIONS FOR TRICHIASIS.—Butler (*The Ophthalmoscope*, July, 1906).—Butler has encountered many cases of trichiasis in which there is no marked entropion, but only a localized tuft of lashes growing internally to the normal row. For the tufts placed in the centre of the upper lid the following procedure has been found entirely efficient: the upper lid is seized by Grady's forceps and everted. The tuft of lashes is then excised by two curved incisions which meet deep in the tarsus. A wedge-shaped fusiform piece of tissue is thus removed, which includes the misplaced lashes and their root follicles, great care being taken that no root follicles are left in the inner lip of the wound. The patient's lower lip is everted, firmly seized between the thumb and fingers, and a fusiform piece of the mucous membrane rapidly cut with a pair of sharp scissors curved on the flat. The graft is adjusted and firmly held in position till the blood has coagulated under it. Well greased oil-silk is used as the dressing.

When the misplaced lashes are situated at either canthus, Butler performs a modified Spencer-Watson operation as follows: The outer (or inner) part of the lid is seized with Grady's forceps, and split for from 8-10 mm. from the canthus inwards. The very greatest care must be taken that the split is internal to all the falsely placed cilia, a lens being used to detect any stumps. The split is deepened for 2½ mm. and then the lower flap is separated with a pair of scissors. The skin flap is truncated, and the lash bearing flap sutured into the space left by the skin flap. The triangular space is filled with a piece of mucous membrane cut from the lip. Dressing the same as in the first operation.

THE KNIFE NEEDLE OPERATION FOR SECONDARY CAPSULAR CATARACT.—Jackson (*Arch. of Ophthalmol.*, March-May, 1906).—Jackson states that, whereas, in practice there are ten failures of the needle operation to but one of extraction, the former operation is all but disregarded in text books.

The following points seem to Jackson essential to the proper performance of the needle operation: (1) To see the operation there must be a strong oblique illumination of the eye, and the surgeon must possess

powerful accommodation or use spectacles with strong convex lenses, or the binocular magnifier. The reflex from the cornea can with certainty be avoided only by depending upon focal illumination in a dark room. In order properly to place the point of the knife for the incision and to determine the exact situation of thickened bands of capsule and synechiae it is necessary to make use of a binocular magnifier, planned to give a working distance of six inches, while the eye is seen through three-inch lenses. (2) The knife needle must be perfectly sharp and its shank must exactly fill the external opening to prevent escape of aqueous. To avoid tearing the capsule, force must be exerted exactly in the direction of the cutting edge. Escape of aqueous adds to the difficulty and uncertainty of the operation. (3) The knife needle must be entered through the vascular tissue of the corneal limbus, and not through the clear cornea. Entrance through the limbus gives practical immunity from infection by going through a vascular tissue. The incision at the limbus doubles the length of leverage and more than doubles the length of the incision that may be obtained by a sweep of the needle. The objections which have been urged to entering the eye through the limbus, namely, nearness of the puncture to the ciliary body, greater difficulty in cutting a membrane obliquely, and greater difficulty in exactly placing the point of puncture are shown to be largely imaginative. (4) Two incisions are necessary, preferably T-shaped or V-shaped. The incision which is nearer to the point of entrance through the limbus should be made first because it is more difficult. Great care must be taken to see that the second incision passes fairly into the first and does not leave a bridge of membrane between.

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The Use of Adrenalin in Spring Catarrh.—Grimsdale (*The Ophthalmoscope,* July, 1906).—Grimsdale agrees with Darier that there is actually but one disease in which adrenalin is really specific and that is spring catarrh. As is well known, the treatment of this condition, apart from the use of adrenalin, is most unsatisfactory; even the slighter forms linger on for years, the vegetations being scraped, cauterized and otherwise maltreated until the conjunctiva is left permanently scarred, when at last the disease ends, either yielding to the energetic measures adopted, or coming to a natural conclusion. Perret (*La Clin. Ophthalmologique,* January 10, 1901), was the first to call attention to the therapeutic action of adrenalin in this disease.

Grimsdale relates two cases as follows: In a child of seven, the upper cul-de-sac of the conjunctiva and the surface of the tarsal cartilage of the upper lid were thickly covered by fine papillary granulations. There were no large sago grains and the cornea was absolutely normal. The fellow eye was unaffected. Astringents and protargol proving entirely ineffective, the granulations were snipped off, which procedure was followed by temporary improvement. The granulations, however, reappeared after a few weeks. Adrenalin chloride 1-2000 was then ordered to be instilled three times daily. Continuation of this treatment for seven months resulted in complete and permanent cure.

That the ocular variety of the disease is equally amenable to this treatment is indicated by the following case: A male, aged 24, had for ten

years suffered from the presence of very large pericorneal masses, in appearance absolutely typical of spring catarrh. The disease was represented in the palpebral conjunctiva by the waxy infiltration, without any prominent papillae. A course of adrenalin chloride drops continued over a period of ten months resulted in the complete disappearance of the pericorneal masses and the restoration of the palpebral mucous membrane to a normal appearance.

## LARYNGOLOGY AND OTOLOGY.

IN CHARGE OF

WILLIAM E. SAUER, M. D.

A NEW ROUTE FOR OPERATING ON MALIGNANT NASAL TUMORS.—Denker (*Muench. Med. Wochen.*, Jahrgang 53, No. 20).—After briefly discussing the various methods of removing malignant growths from the nasal passages, the author describes a plan of operation which gives free access to the nasal passages without any facial deformity. His method consists of making an extensive incision along the junction of the upper lip with the alveolus. The soft parts are dissected in the same manner as in the radical operation on the maxillary antrum. The antrum is then opened and enough of the antro-nasal wall is removed to expose the new growth. After the removal of the growth the cheek is allowed to drop into place and the incision is closed. The after treatment is carried on through the nose. Three cases are described in which this plan was followed. In two cases malignant growths were removed. In the third case a fibroma, which probably originated in the pterygopalatin fissure, was partially removed. In this case the growth could not be removed by this method. In cases having their origin in the pterygopalatin fissure a temporary resection of the superior maxilla is recommended.

A MODIFICATION OF THE INCISION FOR EXPOSING THE MASTOID BONE.—Hammond (*Medical Record*, June 2, 1906).—The incision is triangular instead of being straight or semi-circular, as in the usual method, beginning about one-half inch back of the superior post-auricular attachment, extending through all the tissues obliquely backward and downward along the hairy margin to a point just below the middle of the posterior border. From this point the incision is again carried through all the soft tissues forward and downward to the posterior border of the digastric fossa. By this incision all the post-auricular vessels and nerves are avoided, except possibly some of the minute auricular branches of the occipital, and even they may be avoided if the lower incision of the triangle does not have to be extended too obliquely downward. This method furnishes a roomy field for dealing directly with the bone. Drainage from the bony cavity will be perfect. The lateral sinus can be explored through this incision without extending it backward and the scarring will be less conspicuous because of its proximity to the hairy margin.

ON THE TREATMENT OF SUPPURATIVE MIDDLE EAR AFFECTIONS BY ARTIFICIALLY INDUCED HYPEREMIA.—Fleischmann (*Monats. fuer Ohren-*

*heilk.*, Jahrgang XL, Heft V).—On reviewing the reported results of Bier's method of induced hyperemia in suppurations of the middle ear the author finds that there is much difference of opinion as to its value. In order to determine its merits he applied the bandage in twenty-five cases, nine of which were cases of acute suppuration of the middle ear without complications; twelve acute suppuration with mastoiditis; two chronic suppuration of the middle ear and two peri-chondritis. The histories of these cases are given in detail. Of the nine uncomplicated cases, the discharge ceased in from ten to twenty-three days. The other three showed no improvment but responded promptly when the usual treatment was employed. These results do not show an improvement over other methods. Of the twelve mastoid cases, eight showed only a slight tenderness on pressure and headache at the beginning. Of these eight cases, four recovered in from seven to eighteen days, while four were operated upon, having shown no improvement. In one of the cases the acute symptoms subsided but the necrotic process in the bone developed at a rapid rate, greatly obscuring the gravity of the case. In the chronic cases, which were of mild form, no result was obtained. No improvement was noted in the cases of peri-chondritis. Fleischmann states further that inasmuch as not all cases of acute mastoiditis can be cured by this method and that it makes a latent form out of a manifest one with a destructive process still active, this method becomes a very dangerous one, as the proper moment for operating may pass and evil results follow.

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What Cases of Chronic Purulent Otitis Require the Radical Operation.—Knapp (*Archives of Otology*, Vol. XXXV, No. 2) believes that the views on this operation are tending to greater conservatism. He quotes Balance as being the only one who believes that all cases of chronic purulent discharge from the ear should be treated by the complete operation. Gruenert states that the greater half of the cases where the excision of the ossicles was indicated were healed by this operation. The author expresses his views in the following conclusions:

The operation is not indicated when only the tympanum and especially its mucous lining are involved, because intra-cranial complications are not likely to ensue and the operation usually accomplishes nothing.

The operation is urgent when the symptoms of headache, nausea and vertigo are associated with, and in relation to chronic purulent otitis, where the bone is found affected or cholestatoma is present and these symptoms are not promptly relieved by a minor operation.

The operation is indicated when the signs of the bone involvement continues after conservative treatment has been followed for a certain length of time and the odor of the discharge persists. The operation is not necessarily urgent in these cases as good drainage is present. The question of operation then depends on the patient's wishes and the condition of the hearing in the other ear.

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On the Nasal Treatment of Epiphora.—Meyer (*Berlin. Klin. Wochen.*, No. 23, 1906).—According to Meyer there are two ways in which conditions in the nose may affect the lachrymal apparatus. First through reflexes originating in the nose, which result in an increase of the

secretions; second, conditions which mechanically obstruct the lachrymal canal, the latter being the most important. The canal may be obstructed by hypertrophies of the inferior turbinate, or through crust formations, as in ozena, or through inflammatory processes at the nasal opening of the canal. Among other causes are, indirectly, deviations of the septum, nasal polypi, etc. The author has found as a frequent cause of epiphora a peculiar form of the inferior turbinate. In these cases the inferior border of the turbinate was turned outward and upward, lying against the nasal wall at the insertion of the turbinate. As the opening of the lachrymal canal is just beneath the insertion of the turbinate, about its middle, only the slightest swelling of the turbinate will close the opening. In dealing with such cases the author removes a portion of the turbinate, if the nasal passages are narrow; if they are normal, or atrophic, he fractures the inferior turbinate at its insertion by grasping it with a suitable forcep and turning it upward and inward. The turbinate is then held in proper position by gauze tampons. In the six cases operated upon the epiphora disappeared in from eight to fourteen days.

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A Contribution to the Study of the Mode of Infection in Rhinologic Brain Complications.—Hajeck (*Arch. of Laryng. and Otol.*, Band 18, Heft 2).—A case of fatal meningitis following a chronic suppuration of the ethmoid is reported by Hajeck in which it was found on microscopic examination that the infection took place through the venous anastomosis between the dura and mucous membrane of the ethmoid cells. The bone was found to be intact. The usual mode of infection in these cases is by continuity of surface, especially necrosis of the bone itself.

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Brewer's Yeast in Phlegmonous Tonsilitis.—Melzi (*Gazetta degli Ospedali*, Milan., *Rev. Jour. Am. Med. Assn.*, July 14, 1906).—Melzi reports a number of cases of suppurating peritonsillitis aborted by administration of brewer's yeast 8 to 20 gm. in the twenty-four hours. It was taken in sweetened milk in three doses and rapidly cured the incipient cases and improved all.

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## MEDICAL LAW AND MEDICAL JURISPRUDENCE.

IN CHARGE OF

Irvin V. Barth, LL. B.

Physicians Testifying From Observation—Privileged Communication.—*Smoot vs. Kansas City*, (Supreme Court of Missouri, 1906), 92 S. W. 363.—Suit for damages in the sum of $25,000 for personal injuries sustained by plaintiff on account of an alleged defective sidewalk maintained by the defendant City.

A physician in the employ of the City was introduced by the defendant and asked the following question: "Q. I will ask you, doctor, if you saw the plaintiff spit any blood while on the sidewalk, or in the street before getting into the ambulance on Brook street?" The trial court excluded the answer to this question, and the Supreme Court in pass-

ing upon the alleged error held: "It is sufficient to say upon this proposition, that upon the retrial of the cause if it appears that the relation of physician and patient had been established and that the plaintiff had submitted himself for examination by Dr. Monahan, that then any information acquired by observation after that time would be incompetent. But, on the other hand, if prior to the establishment of this relationship, the doctor observed the patient and acquired information from such observation, we know of no rule of evidence that would make such information privileged."

NOTE—Section 4659 R. S. Mo. 1899 governing this matter of privileged communication with reference to physicians and surgeons reads as follows: "The following persons shall be incompetent to testify * * * ; fifth, a physician or surgeon, concerning any information which he may have acquired from any patient while attending him in a professional character, and which information was necessary to enable him to prescribe for such patient as a physician, or do any act for him as a surgeon."

One of the earliest cases and perhaps the leading case in Missouri which established the doctrine that the term "information" in the statute was not to be confined to oral communications merely is that of *Gartside vs. the Conn. Mutual Life Ins. Co.* (1882) 76 Mo. 446. The court there said:

"The construction contended for by defendant's counsel, that by the statute a physician is forbidden to disclose only such information as may have been communicated to him orally by his patient, would, in our opinion, nullify the law. To hold that, while under the statute a physician would be forbidden from disclosing a statement made to him by his patient that he was suffering from syphilis; and to allow him to state as the result of his observations and examination of the patient that he was diseased with syphilis would be to make the statute inconsistent with itself. It is doubtless true that a physician learns more of the condition of a patient from his own diagnosis of the case than from what is communicated by the words of the patient; and to say that while the mouth of a physician is sealed as to the information acquired orally from his patient, it is opened wide as to information acquired from a source upon which he must rely, viz: his own diagnosis of the case, would be to restrict the operation of the statute to narrower limits than was ever intended by the legislature and eventually to overthrow it."

It was in that case likewise announced that this doctrine of privilege may be invoked only after the relationship of physician and patient may have been actually established. The principle involved is simple, yet situations have arisen and will continue to arise wherein the existence of the relationship and the application of the principle may not be so easily determined. In the case of *Weitz vs. The Mound City Railway Co.* (1893) 53 Mo. Ap. 39, which was a suit for personal injuries sustained by plaintiff while a passenger on defendant's road, it appeared that defendant had sent a physician to examine the plaintiff; that the physician did so examine her, prescribed for her and thereafter at the trial was called upon by the defendant to testify. It was objected that the character of the testimony was necessarily privileged under the statute. The court held

that in view of the fact that it did not appear that the patient was advised that the physician came to examine her in the interest of the defendant, and not in her own, the relationship of physician and patient within the meaning of the statute was established and the physician was incompetent to testify.

It is further true that in order to invoke this privilege the facts which the physician may have learned from the patient concerning the disease or condition must have been such as were necessary to enable the physician to treat the patient. And it was held in the recent case of *State vs. Kennedy* (1903) 177 Mo. 98, that it is for the physician to determine for himself whether the information acquired by him from the patient was necessary to enable him to prescribe for such patient. And in the absence of some showing to the contrary, the presumption will be indulged that such information was necessary for that purpose; otherwise, as the court said, the physician "would not desire it." "To rule otherwise," it was held, "would be to usurp the prerogative of a physician, learned in his profession, which we have no inclination or right to do. We, of course, do not mean to say that we will not pass upon questions which are apparent to the ordinary observer, and to one not learned in the sciences of medicine and surgery which have nothing whatever to do with the case under consideration, and hold them not privileged."

Finally, it is clear that the sole aim of the statute is the protection of the patient. The distinction is made and adhered to that where the evidence of the attending physician is offered by the patient or his representatives, it is competent and admissible; but where it is offered by the opposite party, the physician cannot testify against the objection of the patient or his representatives. And, further, while the statute thus construed gives the patient the privilege of suppressing information it was not intended to operate in its absolute suppression. Hence, it has been held that the patient may waive the privilege and permit the physician to disclose such information. And it constitutes a waiver of such privilege on the part of the patient when he calls a physician to give evidence of information acquired in a professional character. But the ban of incompetency is placed upon certain witnesses only, and it is held that the patient who calls his physician to testify does not thereby waive his right to object to other physicians who have treated him from testifying on the same subject.

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Solicitation of Patients Through Agents, Regulated by State.—*Thompson vs. Von Lear* (Supreme Court of Arkansas, 1906), 92 S. W. 772.—In 1903 the Legislature of the State of Arkansas passed an act forbidding physicians and surgeons engaged in the practice of medicine to solicit patients by paid agents. It was urged that such a law was unconstitutional as being an unwarranted interference with the rights of physicians. But the court held that "under its police power the state has the right to prohibit things that are hurtful to the comfort, safety and welfare of society. It is now well settled that in the exercise of this power the state may regulate the practice of medicine and surgery."

Continuing, the court said: "Counsel for plaintiff quotes Oliver Wen-

dell Holmes as saying that, 'if the whole materia medica was sunk to the bottom of the sea, it would be all the better for mankind and all the worse for the fishes.' We do not dispute that statement, for there may be some truth in it, and it is possible that the legislature had something of the kind in mind when it passed this act. It may have thought that people are too much inclined to imagine themselves in ill-health, too prone to consult doctors, and take medicine anyway, without being urged to do so by hired agents."

NOTE—In Missouri the power of the state to "regulate the practice of medicine and surgery" was affirmed in the case of *State vs. Davis* (1906), 92 S. W. 484, which was the subject of our review in Volume 13, Number 7, pages 624-625, July issue of this publication.

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PRACTICING AS A CORPORATION—LIABILITY OF STOCKHOLDERS.—Mandeville vs. Coutright (Circuit Court of Appeals, Dec. 28, 1905, 142 Federal Reporter 97.—Defeendants were stockholders in a company incorporated in New Jersey and engaged in the practice of dentistry as a corporation in the State of Pennsylvania.

Plaintiff submitted to an operation by an unlicensed employe who performed the work so negligently as to fracture her jawbone and cause her serious injury. The court held that the company had no charter right to carry on the practice of dentistry and the defendants were liable as partners for the injury sustained.

"We agree," said the court, "that its charter did not authorize the Alba Dentists Company to practice dentistry in Pennsylvania, and that by the law of Pennsylvania the Company was forbidden to practice dentistry in the latter state. * * * In the case of Com. ex rel Attorney General vs. Alba Dentists Company, it was held that the Alba Dentists Company (*id est,* the very Company with which we are concerned) could not lawfully practice dentistry in Pennsylvania, and judgment of ouster was entered against the corporation."

NOTE—The right of individuals to incorporate in the State of Missouri for the purpose of engaging in the practice of medicine and surgery and dentistry is just now the subject of controversy in "quo warranto" proceedings, instituted to test this right, in the cases of *State ex inf. Sager vs. W. A. Lewin, et al.* and *State ex inf. Sager vs. Tarr, et al.*, pending in the Circuit Court of the City of St. Louis, Room No. 2, before Hon. Daniel G. Taylor, Judge.

# SOCIETY PROCEEDINGS.

## ST. LOUIS SURGICAL SOCIETY.

Meeting of April 18, 1906.

Dr. Walter B. Dorsett presented specimens of hypernephroma.

## PRIMARY RETROPERITONEAL SARCOMA.

Dr. John C. Munro read a paper with this title (see page 633.)

### DISCUSSION.

Dr. Frank A. Glasgow said his experience was limited to one case which he had reported under the title "The Spleen as a Factor in Gynecology." The patient was a young woman from whom he had removed the tubes and ovaries. Afterwards a tumor commenced to grow in the neighborhood of the spleen. As it continued to increase in size he opened the abdomen and found a tumor full of blood cysts, a sarcoma filling the whole abdomen. It could not be removed and it was impossible to tell where it originated.

Dr. Tupper was much impressed with the great paucity of symptoms leading to a diagnosis, and our inability to relieve the patient in the great majority of cases when the trouble becomes sufficiently apparent to enable us to make a diagnosis. This suggested to him a matter hinted at by the essayist, that is the chance of affording relief by the use of Coley's toxins. His observations in cases of sarcoma located elsewhere in the body encouraged him to continue the use of this method in selected cases, the small cell variety, and the experience of others seemed to prove this treatment has some effectiveness. At present he had under observation three cases, all treated over three years ago, and duly reported, in which sarcoma had been microscopically diagnosed and they are well.

Dr. Elsworth Smith, Jr., said the greatest interest, from the standpoint of the internist, centered in the diagnosis. He did not recall a case of retroperitoneal sarcoma, but mentioned a case of retroperitoneal carcinoma that was very interesting from the standpoint of diagnosis. The patient was a woman of 60 who developed all the symptoms of a malignant trouble of the stomach. She finally went East and was examined by a prominent diagnostician who said he did not know what it was, but it was not the kidney. Dr. Smith and Dr. Fischel studied the case and finally decided that the trouble was in the kidney. The autopsy disclosed carcinoma of the right kidney with metastatic involvment of the glands in the mediastinum. The symptoms in the early stages of the disease were typical of trouble in the stomach but at the autopsy the stomach was found quite free from involvement.

The early diagnosis of a retroperitoneal growth is like a good many cases of early involvement of the stomach in malignant disease, it must be settled by exploratory incision.

Dr. McCandless believed the time would come when through the aid of the internist, physiological chemistry and blood examination, some means would be evolved which would enable us to make an early diagnosis of this variety

of tumor. He mentioned a case of a child of three years brought to him with a diagnosis of bowel obstruction. On opening the abdomen and turning back the omentum he found a large mass with the intestines so involved that it was impossible to do anything for the patient. A section was removed and afterwards pronounced sarcomatous.

Dr. Lutz mentioned two specimens of hypernephroma which he had presented at a previous meeting of the society. In one of the cases a young married woman, 26 years old, having lived in a malarial country, first in Alabama and later in Indian Territory, came to this city. She had a tumor which at first blush suggested renal origin.

In about six months she came back thinking she had malaria. He found the glands in the retroperitoneum had become involved and the secondary appearance produced a tumor which was much larger than the original one.

In regard to sarcoma he said probably all had seen sarcoma in children. He had removed a tumor from a child of about two years the tumor being about as large as a good-sized cocoanut. In removing the tumor he found a number of retroperitoneal glands involved.

Speaking of the diagnosis, he said retroperitoneal tumors involve the region through the retroperitoneal glands and often have their origin somewhere else. He did not think any particular type of symptoms could be called characteristic of the condition. The general clinical picture will always be added to by the location of the tumor. The sugrery of it rather means the relief of symptoms than the total extirpation of the disease. He could not understand how we can formulate, even with large experience, a certain group of symptoms whereby we could make a diagnosis. He thought the symptoms would always be modified by disturbances to which the peculiar location would give rise.

Dr. Luedeking had seen no small number of cases of sarcoma in children, but he could not recall a single case which could be traced back to the region of retroperitoneal tissue. A remarkable thing about cases of abdominal sarcoma in children is the length of time they oftentimes live. He mentioned one case, that of a child of two years, in which there was a history of traumatism from falling upon the abdomen. After some months the abdomen became enlarged. The child drifted to the clinic and the case was diagnosed abdominal sarcoma of traumatic origin. There were none of the ordinary symptoms of involvement or obstruction of the bowels. The case went to the city hospital and at the autopsy the entire mass of intestines could be lifted out of the abdomen with the sarcomatous mass, the coils of intestines representing tunnels in the sarcomatous mass.

Speaking of the specimen of hypernephroma he said he did not believe that this condition was ever of a benign character. He described a case of neoplasm of the left kidney in a baby fifteen months old which developed rapidly and the diagnosis of probable sarcoma of the kidney established. Operation was performed but the tumor was found so intimately attached that it was decided to return the tumor to the cavity. Coley's toxin was used with no definite result and the x-ray applied. This was continued and after some months a gradual improvement took place and the tumor, at first perfectly globular, now presents a rugged surface indicating that cicatrization is going on.

Dr. Mudd recalled a case of retroperitoneal sarcoma seen at the city hospital. The diagnosis was made by exclusion although the tumor was thought to be a simple one. On operating the tumor was found in the lumbar region and was pronounced sarcomatous. There was marked edema of the leg.

Dr. H. McC. Johnson mentioned a case of hypernephroma which involved the pelvis of the kidney extending to all of the large vessels of the abdomen. The symptoms resembled those of colic of stone but were characteristic in that between the hemorrhages the urine was normal.

Dr. Carson said his experience was limited to three cases. One case had been mistaken for an ovarian tumor until the incision had been made; the condition found was such that no attempt was made to remove the tumor. The next case was of doubtful diagnosis and when operated on a large retroperitoneal tumor was removed. The other case was a large retroperitoneal tumor that had been diagnosed as a solid tumor of uncertain origin. In two of the cases the microscope confirmed the diagnosis of sarcoma.

In regard to the symptoms he said he could not see how we were likely at any time, no matter how much progress may be made, to be able to make a certain diagnosis in these cases. The symptoms are very indefinite until the tumor has attained an enormous size and the symptoms of waste out of all proportion to the size of the growth and the rapidity of its development. He did not believe, therefore that we would ever be able to establish definite symptoms that would enable us to make an accurate diagnosis of this condition.

Dr. Munro, in closing, said there was a large field for work in the matter of the diagnosis of retroperitoneal growths. We must go through a period of discouragement taking only hopeless cases and working backward until we can diagnosticate a case in the early stages just as now we can detect a case of appendicitis or ulcer of the stomach, or gall stone.

In hypernephroma, before detaching the growth it is best to tie off the renal vein. The symptoms of location of retroperitoneal sarcoma can be divided into two classes. The lower tumors produce symptoms of pressure on the iliac vein Sarcoma of the retroperitoneal space do not cause trouble in organs near which they lie. They may produce dyspepsia, but they do not interfere with the chemical function of the stomach. He believed the time will come when we shall be able to diagnosticate these cases; physiological chemistry will help negatively in that if we do not find typical chemical reactions we can exclude cancer or ulcer and finally can narrow down the question until we arrive at the diagnosis.

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## ST. LOUIS SURGICAL CLUB.

### Meeting of May 10, 1906.

Dr John Young Brown presented two specimens, one a strangulated femoral hernia, the other a ruptured ectopic gestation.

Dr. Vilray P. Blair reported a case in which the appendix was 7½ inches long, all but the last ¾ of an inch enclosed in the mesentery of the small intestine. In the tip end he found a No. 8 shot and in the middle portion a bone. There was nothing to indicate that the patient had ever had any trouble with the appendix.

### INJURIES TO THE DIAPHRAGM.

Dr. Walter C. G. Kirchner read a paper with the above title for which see page 639.

DISCUSSION.

Dr. John C. Morfit said that possibly the injury had been such at the first stabbing that a hernia had resulted, but there was nothing to exclude the possibility of a congenital hernia. The question arose whether there might

not be some cases in which a rupture of the diaphragm might occur without external injury, as occurs in concussion, lacerations of the stomach, kidneys, etc. It would be very difficult in such a case to make a diagnosis without exploration.

Dr. John Grant said that a very interesting question was whether this hernia was the result of an old stab wound. It recalled a case he had seen at the City Hospital in 1889. A man was brought in with a stab wound in the back at about the 8th or 9th rib. It was supposed to be merely a penetrating wound and the patient made a perfect recovery. About a year later he was again brought to the hospital in a state of collapse with symptoms of obstruction of the bowels. Operation disclosed a loop of bowel had passed through the diaphragm just at the point where the knife had originally entered. This emphasized the importance of a thorough examination in cases where there was a suspicion of the diaphragm being injured.

Dr. M. B. Clopton wanted to know whether there was approximation of the edges of the wound at this time or whether there was a gaping. He thought it would be a difficult matter to diagnose these injuries for it seemed that the edges of the wound would hold together pretty well. He also asked the length of the interval which elapsed between the time of injury and the time of operating, and how long before these patients showed evidence of shock or of disturbance.

Dr. Jonas said that the question was, should we operate when there was a suspicion of a non-complicated injury to the diaphragm? It was possible to exclude, with reasonable certainty, injury to the large bowel by ballooning the colon, and injury to the stomach could be excluded by injecting air into the stomach. Under such circumstances it was doubtful if a suspected rent in the diaphragm deserved further investigation. The diaphragm was a muscle, and a tear or trauma to that muscle might heal very well without sewing. In course of time a prolapse might occur, but in that event we might do the operation Dr. Kirchner described, either thoracic, abdominal or combined.

In regard to the specimen presented by Dr. Kirchner, to suppose that this was a case of congenital hernia, or an injury that occurred a good while before the operation in the area, would be a very peculiar coincidence. On the other hand the hernial sac in this specimen would force conclusion that the injury had extended through the diaphragm but not through the peritoneum, and the peritoneal sac had formed between the time of the first trauma and the operation.

Dr. V. P. Blair stated that between a line drawn around the body from the lower border of the gladiolus to the spine of the 9th dorsal vertebra, and another along the lower border of the bony thorax, would be the surface outline of the diaphragm. In this region any penetrating wound passing four inches vertically inwards from the surface of the ribs would perforate the diaphragm. The important thing was not the perforation of the diaphragm but the perforation of the pleural portion of the diaphragm. In front and behind the attachment of the pleura corresponded to that of the diaphragm. The pleura followed, roughly, the sixth cartilage and would cross over to the junction of the seventh rib and cartilage, and about the mid-axillary line would just about correspond to the upper border of the 10th rib, then passing back would cross the 11th rib taking a slightly upward course. At the mid-axillary line the pleura did not extend down to the attachment of the diaphragm by about two inches, so if the diaphragm was injured at that point nothing but the abdominal wall was injured. The diaphragm itself was nothing

more than a portion of the transversalis muscle, and below the pleura it lay close against the ribs forming a part of the abdominal wall.

The muscular fibers pass upward and toward the middle point of the diaphragm, the vertical part being muscular and the transverse part tendinous. A knife cutting transversely would be very apt to cut across some of the muscle fibers and leave a gaping wound, while if the knife entered from the front where it could cut through the cartilage, the wound might be in the direction of the muscle fibers of the diaphragm and there would be less liability to a prolapse. An artery, the musculo-phrenic (a branch of the internal mammary), passes across the diaphragm, and this artery might be injured in a wound of the diaphragm. The fact that a knife entering below the last rib behind might enter the pleura, or injure the pleural diaphragm, should be remembered. (See "Topography of Vertebral Spines and Ribs." *Jour. Mo. State Med. Ass'n.*, Vol. 1, No. 10, 1905.)

Dr. Kirchner, in closing, said that in most of the cases where the hernia was of congenital origin the patient was not as old as this patient; and in the specimen he could see no definite defect that might be ascribed to congenital origin. The location of the external scar as related to the condition of hernia warranted with reasonable certainty the belief that this was a traumatic hernia and was of a true type. In stab wounds the diaphragm was often only slightly injured, but that cut was sufficient to weaken the wall and it should be repaired, if the condition warranted it, for, as in this case, there would otherwise be the possibility of a bad result. The position of the omentum and of the viscera spoke against congenital hernia. These wounds might be received from any direction and wounds in the tendinous portion may remain open. The easiest method of suturing the diaphragm was by the thoracic route because the diaphragm was thus pushed up into view. By cutting straight through and severing the ribs, a flap is made which when replaced leaves little deformity. By the abdominal route it could be reached with comparative ease by putting the finger into the opening and pulling it forward, something not usually thought of by operators. In these operations on the diaphragm the operator must deal with two cavities; the patient breathes mostly with one lung, while conditions in the abdominal cavity are dealt with, and this combination of conditions made the operation a serious one. As to the advisability of leaving these injuries, it should be remembered that such injury usually resulted in hernia of some of these organs and death would occur sooner or later by strangulation. Injuries to the diaphragm over the spleen and over the liver need not always be repaired. These would close naturally. But when the free portion of the diaphragm was injured it was a different matter. The musculo-phrenic artery going along the outer portion was an important vessel, especially in those wounds cutting across the costal margin.

# BOOK REVIEWS.

PRACTICAL GYNECOLOGY. A Comprehensive Text-Book for Students and Physicians. By E. E. Montgomery, M. D., LL. D., Professor of Gynecology, Jefferson Medical College, Philadelphia. Second Revised Edition. With 539 Illustrations. Philadelphia. P. Blakiston's Son & Co. 1903. Price: Cloth, $5.00.

This second edition contains many changes in the arrangement of the different divisions, which will prove of special benefit to the student. Of course all the later operative procedures had to be described, which necessitated practically rewriting of a large portion of the volume and the addition of seventy pages.

In its present form this treatise is one of the best and most commendable presentations of gynecology.

THE PHYSICIAN'S WIFE. By Ellen M. Firebaugh. Illustrated with 44 Photo-Engravings of Sketches from Life. F. A. Davis Co., Philadelphia. 1904.

Somewhat chagrined by the fact that the famous book, "The Physician Himself and the Things that Concern His Reputation and Success" does not contain any allusions to the doctor's wife as a possible factor in his reputation and success, the author decided to write this little volume "on things that pertain to the physician's wife." She has fulfilled her task in a clever manner. The book contains many a thought and observation that should prove of interest to the physician, both to the one who has a wife, and the one who expects to have one some day.

VOM SICHINACHTNEHMEN. Studien aus 45 jaehriger Praxis. Von Dr. Mensinga. Neuwied & Leipzig. Heuser's Verlag. 1905.

Mensinga, probably the best known German defender of the justifiability of prevention of impregnation, in this little monograph dwells at length on the dangers of coitus interruptus, a means of prevention which is extensively practiced in Germany and certainly is not unknown in this country. The importace of coitus reservatus in the etiology of many diseases is to-day well recognized both by the neurologist and the gynecologist, but its dangers are undoubtedly greatly exaggerated by the writer of this booklet.

DIE DIATETISCHE UND HYGIENISCHE BEHANDLUNG DER ZUCKERKRANKHEIT. Von Dr. Karl Grube. Third Edition. Bonn, Carl Georgi, 1906. Price: Mks. 3.

In a small volume of some 111 pages, Dr. Grube manages to cover concisely but adequately the dietetic and hygienic therapy of diabetes mellitus. In the first fourth of the book he discusses the general principles that should govern such treatment. He contends that every case of diabetes that comes for treatment should at once be placed on a strict diet, one nearly free from carbohydrates. If the glycosuria persists, this strict diet should so far as possible be continued indefinitely. If the glycosuria ceases, carbohydrates are gradually added to the patient's dietary until the limit of tolerance is reached. The patients are then kept on a diet just below this limit. In other words no diabetic should be allowed to have a glycosuria if it can be avoided and where the glycosuria cannot be abolished it should always be kept as low as possible. He does not share the fear of coma as the result of a strict carbohydrate-free diet, believing that nothing we can do will prevent or postpone this catastrophe.

Not all physicians, especially in this country, will subscribe to this doctrine in its entirety. Many of us are inclined to depart from this regimen, especially

in the very mild and in the very severe cases. In the latter it is often a useless cruelty and in the latter, as when for instance an elderly Hebrew excretes small amounts of sugar for years with no impairment of health, dietary restrictions sufficient to abolish the glycosuria are often unnecessary.

For the following three-fourths of the volume, however, there can only be praise. The writer takes up in detail the various diabetic foods, exposing the fraudulent character of most of the substitutes for flour and for bread that are so extensively advertised. In an interesting discussion of the effect of tobacco on the diabetic he calls attention to the danger of irremediable amaurosis to which the free indulgence in smoking exposes these patients. An appendix contains sample dietaries and careful instruction regarding the preparation of a number of dishes suitable for diabetics. An index would have added to the value of the book, which well deserves translation.

TRANSACTIONS OF THE AMERICAN CLIMATICOLOGICAL ASSOCIATION FOR THE YEAR 1905. Vol. xxi. Detroit: Printed for the Association, 1905.

The leading article is one on conditions in Panama apropos of the recent Pan-American Congress there. It is accompanied by a number of beautiful illustrations and is of great interest. Hygenic conditions at the Isthmus are still bad enough but are rapidly improving. The main struggle of the American sanitarians seems to be directed against the ubiquitous mosquito. The other articles are chiefly concerned with the climate of various American localities and with topics connected with tuberculosis.

REPETITORIUM DER PHARMAKOLOGIE. REPETITORIUM DER HYGIENE. Für Studenten und Kandidaten der Medizin. Juenger's Medizinische Universal—Repetitorien, Nos, 4 and 5. Preis br. M., 1,50. Breslau: 1906, Verlag von Preuss und Juenger.

These repetitoria correspond about to our quiz-compends. They cover as nearly as possible the main facts in each branch in a concise manner suitable for memorizing and are especially suited for students cramming for examination. Physicians preparing for state examinations may also find them useful.

MATERIA MEDICA AND THERAPEUTICS. By J. Mitchell Bruce. Chicago, W. T. Keener & Co., 1906.

This little volume illustrates well one of the triumphs of modern book-making. Its thin but opaque paper enables this volume of 632 pages to be kept within so small a compass that it can readily be slipped into the pocket. The subject is covered briefly, but sufficiently for ordinary purposes. Any one desiring more exhaustive information will, of course, have to consult one of the larger text books.

DISEASES OF THE EYE. A Handbook of Ophthalmic Practice for Students and Practitioners. By G. E. De Schweinitz, A. M., M. D., Professor of Ophthalmology in the University of Pennsylvania and Ophthalmic Surgeon to the University Hospital. With 313 illustrations and 6 chromo-lithographic plates. Fifth edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company, 1906.

About two years ago the reviewer had occasion to write a short note on the fourth edition of Prof. De Schweinitz' excellent text-book. The opinion then expressed, that this work was, on the whole, the best medium-sized treatise by an American author on Diseases of the Eye is confirmed by the fifth edition, in which the author has brought the subject thoroughly up to date. A number of special paragraphs appear for the first time and certain portions of the book have been entirely rewritten. The work is authoritative, well balanced and eminently readable, and will unquestionably enhance the already great reputation of the author.

THE OPTHALMOSCOPE AND HOW TO USE IT. With colored illustrations, descriptions and treatment of the principal diseases of the fundus. By James Thorington, A. M., M. D., Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine, Etc. 73 illustrations, 12 colored plates. Philadelphia: P. Blakiston's Son and Co., 1012 Walnut St., 1906.

"This book has been written for the student and general practitioner who desires to obtain a working knowledge of the ophthalmoscope with the interpretations of its findings and has not the time, ordinarily, to study a large text book on the diseases of the eye in which the subject is too deeply embedded for immediate comprehension."

It must be admitted that the purpose of the book as set forth in the above quotation from the preface has been admirably fulfilled. Handy, well arranged and adequately illustrated, it will provide the busy practitioner with the opportunity of studying fundus conditions dependent on general disease. Since the advent of the easily manipulated electric light ophthalmoscope many internists and neurologists have added this instrument to their other armamentarium and have found it of inestimable value in many instances. It is the belief of the reviewer that this little work will still further popularize the instrument in the hands of the general practitioner.

NURSING IN THE ACUTE INFECTIOUS FEVERS. By George P. Paul, M. D. Philadelphia and London: W. B. Saunders Co., 1906.

Nurses for whom primarily this book is intended, will find here an adequate presentation of the subject from their point of view.

NEUROTIC DISEASES OF CHILDHOOD. By B. K. Rachford. Publishers: E. B. Treat & Company. New York. 1905.

It is perhaps unfortunate that this book should be reviewed by anyone who might approach it with any kind of critical attitude. It is probably a useful book in the way of containing certain clinical facts from the author's own experience, which apparently has been extensive enough to warrant their preservation in printed form. Beyond this it is questionable if the book has any *raison d'etre*, certainly not in proportion to its manifest errors and especially not for the tendency, which is so emphatically shown in the first pages, of speaking with certainty concerning things in which the greatest amount of uncertainty prevails. To insist loudly that a thing is so never made it so, and to repeat an error many times does not make it a truth. The author, confessedly a pediatrician, starts out with a calm definition of the function of the nerve cell. He speaks of discharge of energy, immaturity of the nerve cells of a child, the "highest function of the nerve cell is to generate energy," and other things the very existence of which are matters of the greatest doubt. It might be well to state here for the author's benefit that the function of the nerve cell is not known at the present time and it is useless to insist in a clinical treatise that it is positively known. A glance at the recent literature on the subject will convince anyone that there is at least considerable doubt on the subject. The author having settled for himself the physiologic groundwork of his subject goes on to treat the various functional, or as he calls it, neurotic diseases of childhood upon the foundation he has erected. The same cocksureness characteristic of the early pages is found throughout the book. The same avoidance of the literature of neurology is manifest. The author gives a definition of epilepsy that is open to serious criticism and then divides epilepsy into three divisions: developmental, organic, and toxic. Having said, a few lines before, that the pathology of epilepsy is unknown he immediately makes a classification which he designates as based upon its pathology. A slight acquaintance with the literature will show the author that epilepsy has at present simply a clinical classification and that only for convenience. Hysteria according to the author is a psychoneurosis due to functional disturbances of the cortical centers. No one can object to this definition because

it is simply decorative. In the chapter on migraine the author emphasizes errors that should be left out of the literature. The xanthin bases are not the causes of migraine as the work of Pfaff and others has shown and eye strain cannot be said to be the most important factor in the etiology of the disease. This is the opinion of Gould, which, however, at present is not accepted by the best informed neurologists. Enough has been mentioned to show the obvious defects in this book, defects which must always be present when a writer wanders afield into strange territory and leaves his guide too soon behind him. The diseases affecting the nervous system of a child are the same as those affecting an adult and if a pediatrician chooses to write about them he should at least take the pains to find out something about the work of neurologists in the field he is attempting to cover.

ATLAS DER CYSTOSKOPIE DES WEIBES. Von Dr. Wilh. Zangemeister. Privatdozent der Universitaets-Frauenklinik in Koenigsberg. 54 farbige Illustrationen. Verlag von Ferdinand Enke. Stuttgart. 1906. Preis: 24 Mk.

The fact that the importance of cystoscopy is gynecologic diagnosis becomes better appreciated every day, and that, on the other hand, cystoscopy in the woman is in certain aspects different from that in the man, induced Zangemeister to publish this atlas. After a few introductory remarks the author presents, first, a number of colored pictures illustrating the typical diseases of the bladder. Of greater interest to the gynecologist is the second series of illustrations elucidating conditions which are met with only in women, such as certain fistulæ, the appearance of the interior of the bladder in cases of uterine myoma and carcinoma, in the presence of an ovarian cyst, a malposition of the uterus or inflammatory processes in the neighborhood. Very interesting are the pictures of contusions of the bladder found subsequent to labor. The illustrations are made by the author himself because he found that he could make the drawings represent nature more closely than an artist could. In their reproductions in three color print the pictures do not look exactly beautiful, but one experienced in cystoscopy can easily recognize that they are true to the picture as actually seen in the cystoscope and, therefore, are more valuable to the student.

PRECIS D'OBSTETRIQUE. Par A. Ribemont-Dessaignes et G. Lepage, Professeurs agrégés a la Faculte de Medecine de Paris. 568 figures dans le texte. Sixiéme Edition. Paris. Masson et Cie, Editeurs. Prix: 30 fr.

This large treatise of obstetrics has been published in a new thoroughly revised edition, the sixth since its first appearance in 1893. It is usually claimed that medicine is an international science and, therefore, it would seem out of place to speak of French obstetrics. Nevertheless it could hardly be denied that obstetrics as presented in this volume is not exactly indentical with the obstetrics taught and practiced by leading American or German authorities. Certain peculiarities of a race, the temper of both the physician and the patient, external conditions peculiar to certain localities and many other factors, of necessity, make medicine in certain aspects a national science, especially in its practical application. It seems more than a personal predilection of the author that for instance 42 pages of this volume are devoted to a consideration of symphysiotomy, an operation invented, as is well known, in 1777 by the Frenchman Sigault, but very rarely executed today outside of France. It is just this local color, such a national partiality, which makes the perusal of a foreign book not only interesting but also, extremely valuable.

THE PRACTICE OF GYNECOLOGY. Original Contributions by American Authors. Edited by J. Wesley Bovee, M. D., Professor of Gynecology in George Washington University, Washington, D. C. Illustrated with 382 engravings and 60 full page plates in colors and mono-chrome. Cloth, $6.00 net. Lea Brothers & Co., Publishers. Philadelphia and New York. 1906.

This is the first of a series of three companion volumes dealing respectively with gynecology, obstetrics and pediatrics. One of the striking features of this

book is that it is not strictly limited to gynecology, but also considers exhaustively the diseases of the neighboring organs, bladder and rectum. In this way the scope of the volume has been made broader than that of the usual textbook of gynecology. In order to secure the advantage of the maximum of practicality and to present the vast and important subject in the most complete manner possible, the author has assigned various chapters to six other recognized writers. Of course, each of the seven contributors has striven to embody into his chapters the maximum of scientific, interesting and practical information, which marks another noteworthy feature of this volume. We doubt that the subject of genital fistulæ e. g., ever has been presented in a more satisfactory manner, or tubal inflammations and their operative treatment considered in a more comprehensive form. Men like Goffe, Miller, G. H. Noble, Schenck, Watkins and Werder, under the guidance of Bovee, could not fail to produce a treatise of unusual merits.

DER DESCENDENZGEDANKE UND SEINE GESCHICHTE. Dargestellt von Dr. Edgar Dacqué. Muenchen. Ernst Reinhardt, Verlag. Preis: 2 Mk.

The theory of evolution can today be found as the underlying principle of almost every new biologic investigation or discovery. The modern physician has accepted this theory as an established fact. He, therefore, cannot fail of being interested in the history of the gradual development of the evolution theory as presented in the little volume before us. After having given in the first part of the booklet, a clear and comprehensive expose of this theory, the author, in the second part, follows the first traces of this thought of evolution from the bible up to Darwin, and concludes with a consideration of the most recent literature on the subject.

THE EYE AND NERVOUS SYSTEM. Their Diagnostic Relations. By Various Authors. Edited by Wm. Campbell Posey, Professor of Ophthalmology at the Philadelphia Polyclinic, and Wm. G. Spiller, Professor of Neuro-Pathology, at the University of Pennsylvania. Octavo. 800 pages. Thoroughly illustrated. Cloth, $6.00. With 22 chapters by the leading specialists of the United States. J. B. Lippincott Co., Philadelphia and London.

A book of this kind has been much desired by English readers ever since the monumental work of Wilbrand and Saenger in German has shown how necessary such a compilation is to both the oculist and the neurologist. To be of the greatest practical utility a book on such a subject must be of a size that can be readily consulted and readily handled and of sufficient brevity to enable one to get the whole content under any special heading in a reasonable time. This is not the case with the larger works, but is so in the present instance. A number of well-known ophthalmologists and neurologists have taken part in the writing of the book and, consequently, it suffers, as all books will suffer which are the joint product of many different writers, all of them not having the same degree of excellence insofar as the talent of presentation is concerned. In other words, the chapters are very uneven, some deserve the highest praise, some are indifferent and some ought to be omitted in the next edition. In the first place the chapters written by the editors are uniformly good, this refers especially to Spiller's contributions. Posey's are limited to two chapters, one of which on the psychological effects of operations on the eye is most admirable. So excellent are those parts written by the editors that one wishes they had written the whole book. Knowing the standard of work which Spiller and Posey stand for one can be assured that they have in their possession all the necessary data for a book of this kind and a facility in expression that is not by any means found in all the collaborators chosen by them for the making of this book. Nothing better than Spiller's introductory chapter has been met with recently. It deals with the anatomy of the intracranial portion of the encephalic nerves. It is brief, clearly written and somehow leaves one with the impression that all the latest literature has been carefully considered. The quality of this achievement can be readily understood when the immense activity in the study of the normal anatomy of the nervous system of late is taken into account. Mills' chapters on

the psychology of vision and the focal diseases of the visual cortex, deserve especial mention. Mills writes on a subject like this with the conviction that only comes from an increasing amount of carefully observed clinical material. This chapter forms a well planned resume of all the knowledge that we have on the subject, tinctured naturally with the well known views of Mills. This adds interest to a subject, the physiology of the nervous system, which is in a sense his own special field. A chapter on the general examination of the eye from Casey Wood and one on the ophthalmoscopic examination from Wurdemenn will be of great help to the neurologist, especially in the importance which is given to the correct examination of the field of vision. The chapter on brain tumors by Spiller is worthy of attention and it places in a very concise form the latest information which we have on the subject, especially from the point of view of cerebral localization. Exception must be taken to the chapter on the effects of eyestrain in the causation of various neuroses. This is written by Risely. It is a queer commentary on the attitude of medical writers towards mooted questions, such as this, that in writing they seem unable to take a sane and just position, forgetting apparently that never was a question of fact settled by intemperate assertions. It is not essential as far as the reviewer sees, to adopt immediately a dramatic and highly colored style whenever the subject of eyestrain is written about. This attitude is no doubt due to the example of militant writing set by the intemperate Philadelphia advocate of the eyestrain theory. That eyestrain has a certain place in the etiology of neuroses is no doubt true, but that it is the all important thing that the writer of this chapter would have us believe is not so readily admitted, notwithstanding the highly dramatic quality of the clinical histories which, without a sense of their unfitness, he includes in his chapter in the attempt to prove his assertions right up to the hilt. There are a number of chapters which might be omitted to the betterment of the book. Their uselessness creates a certain feeling of irritation on the part of the reader and a desire to know why they have been included. Such chapters as the surgical treatment of intracranial lesions, the surgery of trigeminal neuralgia, tremors, reflexes, gaits and degeneracy, certainly have no place in a book which pretends to treat of the relation of the eye to nervous diseases.

As a whole the book can be said to fill the place for which it was designed. It does this well enough to attract readers and to instruct them well and pleasantly. The faults of the system of collaboration, useless in this instance, will make plenty of room for the final book on this subject which this certainly is not. The reviewer wishes to suggest that Spiller and Posey in the next edition of the book leave out the collaborators and write the book themselves, in which case we will have a book which will cause all of us to rejoice.

ARCHIV FUER PHYSIKALISCHE MEDIZIN UND MEDIZINISCHE TECHNIK. Herausgeben von Dr. H. Kraft und Dr. med. B. Wiesner. Verlag von Otto Nemich in Leipzig. Preis pro Band (4 Hefte) Mks. 12.00.

One of the most characteristic features of modern medical science is its close relation to the science of physics. Practically every new discovery in the field of physics has been exploited in medicine to advance diagnosis and therapy. We may only mention the ion-theory, the permeability of tissues for the X-ray or radioactivity. It is this new aspect of scientific and practical medicine to which these "Archives" are devoted. The first volume of this publication is now completed and by its variegated and interesting contents it is proved that there was a need for just such a journal. Besides a great number of excellent original articles we find in this volume comprehensive reviews of all those recent advances and discoveries in the physical-chemical and photographic industries which pertain to medicine.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., assisted by H. R. Landis, M. D. June 1, 1906.

The volume just issued contains reviews of the literature on the following special subjects: Hernia, by William B. Coley; Surgery of the Abdomen, ex-

clusive Hernia, by Edward Milton Foote; Gynecology, by John G. Clark; Diseases of the Blood. Diathetic and Metabolic Diseases. Diseases of the Spleen, Thyroid Gland and Lymphatic System, by Alfred Stengel Ophthalmology, by Edward Jackson. In completeness and clearness these articles stand unsurpassed.

KOMPENDIUM DER ROENTGENOGRAPHIE. Ein Praktisches Handbuch von Ingenieur Friedrich Dessauer und Dr. med. B. Wiesner, mit 201 Illustrationen im Text, 11 Tafeln in Autotypie and und 12 Radiographischen Tafeln. Verlag Otto Nemnich, Leipzig, 1905.

The first part of this work contains a thorough consideration of the Physics of the X-Ray. Following this, the various appliances in use at the present day are taken up and carefully considered. Fluoroscopes, storage-batteries, tube-stands, and, in fact, all the appliances of the most modern type, are described. The chapter on the Technique of Taking Pictures is well illustrated showing the best positions in which to place the patient in order to get the best results. The x-ray plates which form the appendix of this book are of the highest type of x-ray photography.


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